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National Economic Management

Economic Development Institute
The World Bank
October 1993
WPS 1205

Wage and Employment Decisions in the Russian Economy

An Analysis of Developments in 1992

Simon Commander
Leonid Liberman
and
Ruslan Yemtsov

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This paper — a product of the National Economic Management Division, Economic Development Institute, and Moscow State University — is part of a larger effort to analyze the workings of labor markets in transitional economies. The study is part of a research project funded by the Bank's Research Support Budget on "The Labor Market in Transitional Socialist Economies" (RPO 677-30). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Olga del Cid, room M3-047, extension 36303 (October 1993, 56 pages).

Commander, Liberman, and Yemtsov analyze changes in the Russian labor market in 1992. They focus on the path of wages and employment in a context of partial price liberalization and considerable ambiguity about government and central bank policy.

Under the former Soviet economy, the firm was the bedrock of the centrally planned system. The relaxation of centralized controls did not result in substantial employment losses partly because of the implicit "moral economy" of the system and partly because of continuing constraints on wages.

In 1992, the wage structure and employment levels in the economy's state sector exhibited surprising stability, reflecting the system's immense inertia. Despite announced regime changes, at the end of 1992 the number of jobseekers was no more than 1.5 percent of the labor force.

But significant changes have been made: wage and employment decisions have been widely liberalized; some restraints on labor mobility have been removed; changes have also been made in ownership title; and there has been some expansion in the private sector, as yet largely concentrated in services.

These substantive changes are important for future expectations about entitlements to jobs and income, but the changes remain restricted and the sources of these restrictions imply significant economic costs. The underpinning of the current stagflation is the inability to break the soft budget constraint on state firms and to impose realistically a systematic, transparent set of constraints on the firms' financing demands. This has combined with the firms' continuing ability to exercise market power alongside weak controls on wage claims.

Employment transitions have been dominated by high levels of quits at the base of the skill structure. Involuntary separations have been limited, involving mostly women and white collar workers. Firms commonly provide de factor unemployment compensation to workers in the form of minimum wage payments with little or no work requirement. There is evidence of some increase in the proportion of laid-off workers among the unemployed, but firms seem to prefer hoarding labor in light of uncertainty about policy, firm, or product-specific market prospects.

Wages have been more volatile. Wages initially bore almost all of the adjustment costs, but have shown mild recovery thereafter. Lax monetary policy and decentralized insider power, giving rise to relative employment stability and real wage rigidity, are powerful ingredients for hyperinflation.

Wage and Employment Decisions in the Russian Economy
An Analysis of Developments in 1992

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[1] The paper has been prepared as a contribution to the World Bank sector study -- "Social Protection in the Russian Federation". The authors thank Timothy King and Jeni Klugman for advice and comments; Natalya Golubeva, Irina Perova and Z. Ryzkova of Russian Goskomstat for help with data.

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Introduction

In this paper we provide an analysis of recent changes in the Russian labour market. Our emphasis is on the path of wages and employment in a context of partial price liberalization, high and rising inflation and considerable ambiguity with respect to the nature of government and central bank policy. Aside from attempting to map using official data the path of basic variables over the recent period, we also attempt to develop a set of simple analytical models that capture the wage and employment decisions made by firms. For, given the manner in which the former Soviet economy was organized, the firm in effect was the bedrock of the planned system. While subordinated to a central authority, normally a ministry, the clear potential for firms to arrogate decisions motivated the relatively tight retention of centralized controls. And indeed when those controls were relaxed, the decentralization that was validated predictably yielded stronger nominal wage claims and considerable labour turnover. Nevertheless, it did not result in very substantial employment losses. This can be attributed not only to the implicit 'moral economy' of the etatiste era but also to the fact that constraints on wages and their intra-firm allocation were retained. The result, as we show, was that by 1991 the wage structure and employment levels in the state sector of the economy continued to exhibit surprising stability. In fact, this stability spills over into 1992, pointing to the immense inertia in the system.

The paper is organized in the following way. Sections 1 and 2 provide discussion of the initial conditions and the background against which the 1992 changes need be set. The emphasis is on wages and employment and the starting point the new Enterprise Law that was enacted in January 1988. In Appendix 1, we also provide a simple bargaining model which seeks to capture the main intended features of wage and effort setting in firms still regulated by a central agency but motivated through incentive payments. The same sections then concentrate on developments in 1991 and 1992 drawing not only on time series but recent firm and establishment level information. Aside from using official data provided by the Russian Goskomstat, we complement these discussions by extensively drawing on a new dataset -- a survey of 41 firms in the Moscow and Volga regions -- that we organized. The sample covered firms in 10 branches, including trade and services. The firms were randomly selected and all interviews were held over a period of two weeks in mid-November 1992. While the sample size is clearly small and by no means representative, we feel that it provides a useful check on more aggregated data, while also providing a range of information that cannot be picked up elsewhere.

It is shown in the paper that despite significant negative shocks to output, there has been little

significant change in employment. Consequently, labour productivity has generally fallen. Sector, branch and regional data appear to confirm the apparent sluggishness of the adjustment in terms of quantities. With respect to wages, changes in effective purchasing power, given shortages, are difficult to identify so that changes to the statistical real wage need be treated with considerable caution. Further, institutional rigidities resulting in cash shortages and other banking system constraints continued to enforce a wedge between notional and actual purchasing claims in the first half of 1992. Thus, the strong impression that is gained is of significant wage flexibility over 1992 with relatively little adjustment to employment. At the same time, we observe large and fairly synchronised downward movements to output. Appendix 2 sketches a model in which incumbent workers in a de facto worker controlled firm are primarily concerned with employment stability, one result of which is that wages prove more flexible.

Section 3 provides a detailed discussion of unemployment on both a Russian and regional levels. It is shown that unemployment has yet to attain significant levels and has been rather uniformly distributed across regions. Among those who are unemployed, women, younger labour force participants and white collar workers dominate. Indeed, over three quarters of the unemployed in mid-1992 were women. Sections 4 and 5 relate the changes in wages and employment to the wider changes in economic policy and particularly to the monetary stance of the Central Bank over 1992. The nature of the shocks to output and employment are discussed and the apparent dominance of aggregate shocks emphasized.

Section 6 complements the discussion by focussing on the role of benefits -- cash and non-cash -- provided by firms to labour. It is shown that such benefits comprise up to 25% of labour income using the information collected from our survey and hence necessarily constitute a key area in the reform of wage payments and firm expenditures. Section 7 concludes.

A final caveat is in order at this stage. The discussion throughout centres on the state sector and ignores recent and increasingly significant changes in control and ownership. Already, there is evidence of widespread small-scale privatisation in the retail sector, particularly in Moscow, alongside spontaneous privatization in state firms. Indeed, one recent paper incautiously suggests that private sector employment in Russia may now approach 20% of total employment [2]. But for obvious reasons, information on the private sector is difficult to secure and we choose for the time being to limit our attention to the state sector. Furthermore, it is as yet unclear that the title changes occurring among state firms corresponds to any meaningful change in behaviour.

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[2] Aslund (1992)

Fig 1


Russia: Real Average Industrial Wages
Various Deflators
550
500
450
400
350
300
250
200
150
100
50
Jan91
feb
mar
apr
may
jun
jul
aug
sep
oct
nov
dec
jan92
feb
mar
apr
may
jun
cpi def
rpi def
gdp def
iwp def

1: Wage Setting

1.1: The System of Payments

It is well appreciated that wages in the Soviet system were originally intended to square a circle; to fulfil basic efficiency criteria -- in other words, motivate workers -- while constraining distributional effects likely to be associated with an efficiency based scheme of payments. The result was a centralized or tariff system which tolerated some limited wage dispersion by skill, seniority and other attributes. In addition, a set of mechanical regional coefficients were applied to all ranges of the tariff wage structure to reflect differences in the price level and working conditions as well as to channel labour to priority sectors [3]. However, there was an increasing use of bonuses to motivate workers with the distribution of bonuses determined within the firm. Piece rates and bonus schemes were widespread. The overall size of the bonus fund was ultimately determined by the central agencies. Thus, while the Soviet wage system remained heavily regulated from the centre it had increasingly absorbed payments practices that explicitly linked pay to individual or firm level performance.

By the mid-1980s bonuses comprised over 16.5% of the average industrial wage rising to just under 21% in industry. A broader definition encompassing some measure of surplus sharing indicates indicates that in industry over 80% of establishments operated profit-sharing schemes with those schemes contributing between 10/12% of average earnings in 1991 [4]. The performance of work collectives was the dominant base for bonus calculations with a further 15/20% of cases relating bonus payments more mechanically to the firm's gross revenues. Of further note has been the growing use of additional monetary payments supplementing tariff based wages; roughly 75% of firms paid such supplements and these comprised on average over 40% of total earnings.

The structure of relative wages that resulted had a number of striking traits. First, one notes the relatively low returns to skills or grade. A 1991 establishment level survey of 500 firms in the Moscow and St.Petersburg regions indicates, for example, that managerial wages as a multiple of unskilled wages were rarely more than 2.5 [5]. The World Bank survey carried out over 41 firms in the Moscow region points to a similar differential in the third quarter of 1991. Management wages were barely 35% on average higher than for professional staff and/or skilled workers. In general, wages of supervisory and

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[3] A full description of the system is provided in Oxenstierna (1990). See also Adam (1980).

[4] Standing (1992a)

[5] See Standing (1992a)

Table 1: Retail Prices, Wages and Regional Variation: Summary Statistics, 1992

	Inflation (% Change)	Range Max	Range Min	St.Dev	CV	Nominal Wages (% Change)	Range Max	Range Min	St. Dev.	CV	Real Wage (Jan 92 = 100)	CV
1992												
FEBRUARY	*24.5*	*51.9*	*1.1*	*12.2*	*0.10*	*39.4*	*5653*	*799*	*968.9*	*0.42*	*111.9*	*0.14*
MARCH	*21.1*	*53.5*	*4.1*	*10.5*	*0.09*	*36.0*	*7496*	*1066*	*1232.2*	*0.48*	*125.7*	*0.16*
APRIL	*15.3*	*54.7*	*2.5*	*8.5*	*0.07*	*12.0*	*10585*	*1218*	*1563.0*	*0.45*	*122.1*	*0.18*
MAY	*11.1*	*36.1*	*4.0*	*5.8*	*0.05*	*20.4*	*12558*	*1479*	*1887.0*	*0.51*	*132.3*	*0.21*
JUNE	*13.1*	*25.0*	*5.7*	*4.4*	*0.04*	*37.8*	*14824*	*2124*	*2362.9*	*0.51*	*161.2*	*0.21*
JULY	*7.2*	*18.6*	*0.5*	*3.4*	*0.03*	*7.7*	*15202*	*2307*	*2565.1*	*0.47*	*161.9*	*0.22*
AUGUST	*7.2*	*17.2*	*1.9*	*2.6*	*0.02*	*7.7*	*16254*	*2425*	*2713.3*	*0.46*	*162.8*	*0.25*
SEPTEMBER	*11.0*	*18.1*	*2.0*	*3.5*	*0.03*	*25.6*	*21065*	*3155*	*3297.9*	*0.45*	*184.2*	*0.25*

specialist manual workers in all sectors were either equal to or higher than for specialist employees. This gap was adjusted upwards when measuring over average earnings (including bonuses and other non-wage monetary payments). Nevertheless, the impression of a compressed structure of wage differentials when measured over job functions is reinforced. This conclusion holds when further classifying over type of control structure. Thus, while joint-stock and cooperative firms had clearly higher wage levels for comparable skills, the within-firm distribution remained very similar to that for the dominant state sector.

Disaggregating by sector, it is clear that industrial sector workers have remained privileged with wages notably higher than in non-productive branches. Priority sectors, such as energy and to some extent the military, had wage levels at the peak of the wage ladder. Factoring in bonus payments to a fuller earnings measure tended to exaggerate this differentiation. Even so, available data show rather low spreads across branches and it is striking that with respect to the average state sector wage the average branch variation was no more than plus/minus 25% by 1985 [6].

These features suggest the following conclusions; (i) that greater decentralization of wage decisions and growth of non-state firms was associated with some departure from the tariff wage structure, permitting greater dispersion in wages across skill and other categories, (ii) that performance-linked payments shifted average earnings up and permitted a further widening in wage differentials, (iii) that these resulted from an explicit objective of inducing greater effort from workers and, by associating earnings more closely to firm performance, to induce managerial behaviour on the part of managers rather than have them act as simple transmission belts. While the degree of differentiation should not be exaggerated, there is some evidence to indicate that these shifts reversed in part the earlier (pre-1985/86) tendency to lesser relative wage dispersion.

From the beginning of 1988 firms were subject to a new Enterprise Law that enhanced the weight of firm level decisions with respect to the centre and provided for worker participation in firms decisions [7] Greater discretion was granted to the firm in disposing of bonus payments while maximum wage ceilings were abolished. While in principle the Law allowed for firms to determine the employment level and composition, until very recently we can consider employment to have still been determined outside the firm. Separations continued to be difficult to enforce. The Enterprise Law explicitly linked wages and bonuses to financial results with the amounts available to the wage and bonus funds being directly

[6] Oxenstierna (1990), pp144ff

[7] This included the right to elect firm managers every five years with bi-annual general meetings of the work force.

associated to gross revenues in the first case and residual income in the second. The principal features of the Law were that firm workforces were to have an active say in management, including electing the head of the firm. Firms were intended to be self financing with payments to the budget predetermined and fixed over five year periods. Firms could also determine the size and structure of employment as well as wages. Initially, there was no maximum limit on individual wages, but this was amended in 1989 as wage demands accelerated. Appendix 1 provides a more detailed discussion of the wage rule that was adopted by the vast majority of Russian firms [8].

In addition to cash wages, including bonuses and surplus sharing, workers commonly received significant non-monetary benefits, including housing. This was primarily true for industrial firms. A fuller discussion of this issue is reserved until Section 5 below.

1.2: Wage Path in 1991 and 1992

We have the obvious problem in measurement across scarcity regimes, complicated in 1992 by the additional problem of cash shortages and liquidity constraints. Both drive a wedge between notional and actual claims making identification of the real-real wage almost impossible. Further, the presence of secondary work -- in 1991 this was measured at 3.5% of total employment in the state sector -- and its likely expansion omits components of aggregate wage income. In addition, increasing recent evidence of short time work and unpaid vacations forced on workers by firms would result in reduced de facto nominal wage payments. An October 1992 Goskomstat survey of 22,000 firms found that a quarter had shifted to short time working or unpaid vacations for workers. Approximately, 40% of the compulsory leave was unremunerated with partial wage payments in a further 54%. These developments in 1992, paralleling the sharp downward shift in capacity utilization, obviously reduce effective wage payments. Despite these important caveats, the aggregate data carry information both with respect to the direction of change and the structure of relative wages.

At first glance, official wage data show sectoral statistical real claims accelerating in 1991. Ignoring money illusion and goods shortages, we see roughly 20% increases in average state sector as well as industrial wages over 1991, with most of this increase falling in the second half of the year. At the peak in December 1991, statistical real wages were roughly 50% higher than in January 1991 and double the level of January 1988 when the Law on Enterprise Reform was enacted. However, cash constraints and deteriorating goods market supply make comparison problematic over time. In addition -

[8] For a full discussion and presentation of the two possible rules for determining residual income, see Oxenstierna (1990).

Table 2 : Regional Data (January - July/August 1992: January 92=100)

Region	Nominal Wages	Total Emplcy.	Industrial Employment	Unemploy. Broad	Unemploy. Narrow	Vacancies
North	355.4	98.8	99	160.8	215.4	86.2
NW	325.7	93.3	95.9	237.8	318.8	43.9
Centre	352.1	96.6	99.1	206.6	330.8	65.1
V-Viatsky	407.8	98.7	99.4	224.5	942.0	60.3
C.Chernozem	464	102.6	99	200.2	573.8	51.1
Povolzhsk	431.9	100.7	99.3	153.8	507.5	58.2
N.Caucasus	325.9	100.9	98.4	186.1	472.9	53.4
Ural	396	97.7	100	155.3	823.3	54.6
W.Siberia	385.6	99	100.9	203.4	802.9	59.8
E.Siberia	302.4	100.4	102.1	163.5	431.7	71.3
Far East	392	97.5	100	174.6	473.4	83.6
Kaliningrad	408.8	96.1	94.7	212.8	213.7	70.8
RUSSIA	373.8	98.5	99.5	186.7	426.4	62.0

- as Figure... makes clear -- Russian price series display considerable variance, particularly in 1992.

The climb in statistical wages is followed by a precipitous fall over the first quarter of 1992; a decline of over 55% over end-1991. The decline is yet larger -- around 75% -- when measuring average industry sector product wages. There are some signs of slight upward drift again (see Fig.1) after January 1992. This leaves statistical real wages at around their mid-1991 levels by the same period in 1992. The second round of the ILO establishment survey, covering 109 units, in June 1992 reports an average wage decline of around 30% between September 1991 and June 1992. This would be broadly consistent with stability over the period mid 1991 to mid 1992.

We can supplement the discussion of branch level wage developments by looking in some more detail at the evolution of regional wages. This has merits for several reasons. First, for institutional reasons the data appears to be more reliable. Second, for real wage calculations (putting aside for the moment problems associated with scarcity regimes) we need factor in the non-trivial differences in regional price levels. We observe high coefficients of variation for the first quarter. The spread over maximum and minimum rates of change in retail prices remains quite significant throughout. However, it is evident (see Table 1) that regional variations in inflation have declined over the course of 1992 and further data disaggregated by state and kolkhoz markets further substantiates the view that regional inflation rates have strongly converged over the course of 1992. Third, we need note the differences arising from the system of regional wage coefficients applied to base wages.

Nominal wages disaggregated by region are striking for the high variance across region as indicated by the coefficient of variation. While we observe no trend over 1992 we do find a major increase in variance when compared with 1991. Deflating by regional retail prices, we observe considerable dispersion and instability. The coefficient of variation indeed increases significantly throughout 1992. Differences in the path of regional real wages, given convergence in price changes, can thus be assumed to be driven by divergent nominal wage claims than by variations in regional inflations.

The striking divergence in real wage claims is matched by the apparently strong rebound over 1992 that we observe since January. Using the retail price deflators we report regional real wage indicators for the first nine months of 1992 in Table 2. Basing to January, we observe an average real wage expansion of over 80% in a period less characterized by large divergences in goods availability. The expansion in real claims relates to all regions but is highly uneven in its temporal distribution.

Relating statistical real wages to July 1991 (prior to the extreme scarcities of the last half of 1991)

levels we can see that the initial fall in January and February 1992 is rapidly recuperated. However, the picture is somewhat changed when using the consumer price index; wages remain broadly constant. But the consumer price index is a less appropriate deflator, particularly over the earlier months of 1992, given high dispersion in regional price changes. The broad picture thus appears to be that the real wage contraction associated to the price shock of January 1992 has subsequently been largely reversed.

This conclusion appears true across most sectors, though of course current statistics do not adequately capture the movement of wages in the private sector. The ILO survey reports real wage contractions in the private sector very slightly lower than in the state sector but aggregate 'official' private sector, cooperatives and joint ventures data report a wage fall over early 1991 exceeding that for state firms and persisting through to mid-1992. But the situation is muddied, particularly given the rapid and ambiguous translation of title occuring over this period. Sectors with above average wage expansion in 1991 maintained that process, while more gradual wage increments continued to characterise ex ante lower wage sectors, particularly in the non-material branches.

Evidence from the World Bank survey provides some interesting evidence for the path of wages over the period 1991.3 - 1992.3. Table 3 provides the raw information categorizing in terms of firm size. Several features are notable. First, the predictably low dispersion in the wage levels across firm size class and the bias in the wage structure toward skilled workers. Nominal changes across the period show a generally high degree of convergence, though with clearly stronger wage increases reported in the larger firms and for higher level staff, in particular. Real statistical wages computed using consumer prices indicate a fall of between 35-45% for most workers, with, however, much lower decline for all workers in larger establishments. Indeed, top management in the largest size class slightly improved their statistical real wage, with other categories registering declines of around 10/20% (see Table 4). This is broadly consistent with the information imparted by official, aggregate wage series.

1.3: Relative Wages

With respect to relative wages, there is some upward drift in the standard deviation and coefficient of variation across sectors and some initial evidence of that continuing in 1992. But Figure 2 shows relatively limited shifts in sectoral wage rankings but dispersion of the levels across branches increases in 1992. Industry, transport, construction and financial sector wages remain the wage leaders but the spread around the average wage is not that powerfully altered, with the exception of agriculture

whose relative wage has fallen sharply [9]. Indeed, looking at relative sectoral wages over 1991 and January - August 1992 we observe very little change, indicating the power of institutional features in the wage setting that have tended to dominate the distributive effects commonly transmitted through high and unstable inflation. This is confirmed by our firm survey which indicates that in over 80% of cases wages remained administratively set, rather than bargained. This points to a continuing de facto role for the tariff wage structure.

There is, however, some fragmentary evidence that wage differentials have widened in favour of groups of organized -- largely but not exclusively blue-collar -- workers and that this process likely reflected more the exercise of respective bargaining powers rather than any explicit association of wage to output changes [10]. Miners and energy sector workers have initially expanded their ex ante wage differentials both with respect to industry in general as also with respect to skilled or professional workers. It is indicative of the perversity of the Russian wage structure that while miners and university lecturers' wages were roughly comparable in 1989 by May 1992 the former received average wages over six times that of the latter. This gap may have narrowed by the third quarter of 1992 but was still around a multiple of four [11].

Yet, while it is clear that certain groups of organized labour have succeeded in consolidating their role as wage leaders, this process is more muddied elsewhere. For instance, evidence from the World Bank survey provides limited and somewhat ambiguous evidence of a change in wage relativities over a range of branches. While over two-fifths of sample firms reported an increase in wage differentials, this proportion was exactly matched by firms reporting no change. And the remaining 17% reported decreasing inequality in wages over 1992. For those who did report an increase in wage differentials, most attributed this to market features rather than, say, any explicit association to private sector wages or differential linking to prices. More uniform was the perception that private sector wages were consistently higher across all comparable skills or grades -- this was the view in nearly 75% of sampled firms.

Confronting this perception with the actual evolution of wages over our sample between the third quarters of 1991 and 1992 respectively, we find rather close convergence in rates of increase across the

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[9] But this excludes the kolhoz and likely understates the wage path.

[10] Commander and Yemtsov (1992)

[11] Economicheskaja gazeta, May 1992 and Delovoy Mir, October 1992

Fig 2

Russia: Real Consumer Wages by Sector

1991 – April 1992

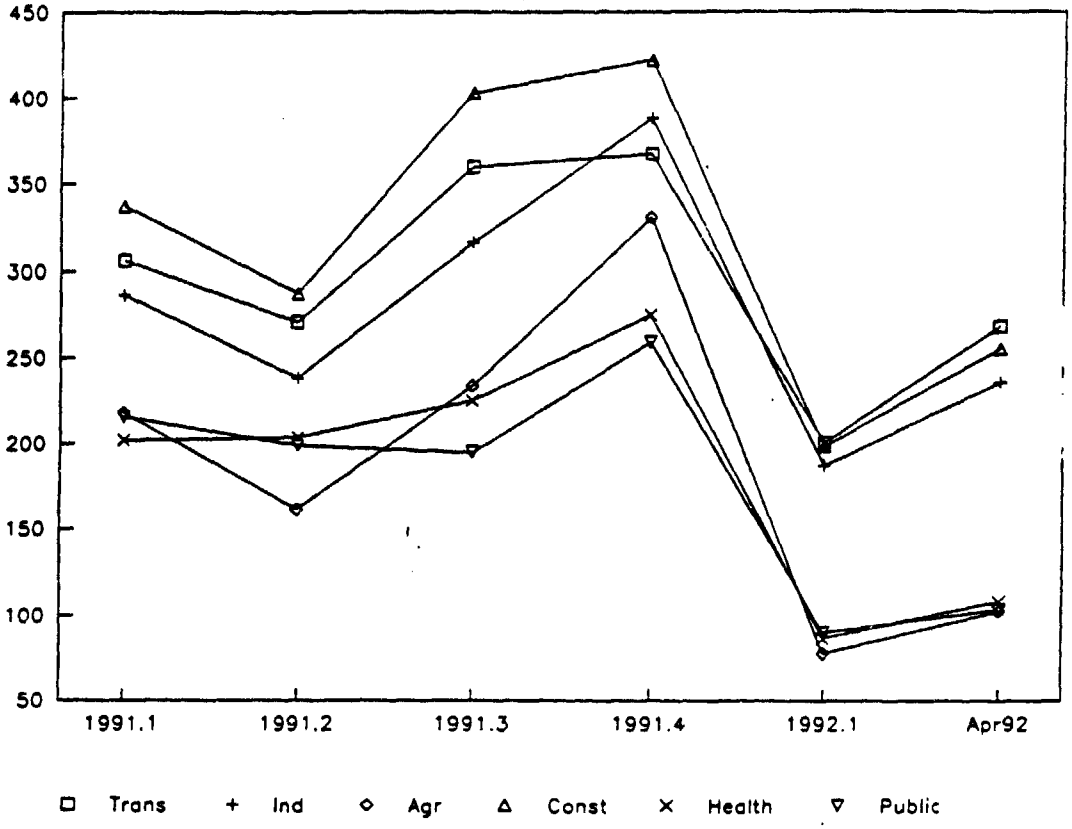


Table 3: Wage Levels, 1991.3Q - 1992.3Q: Moscow Region
By Firm Size and Type of Employee: Monthly Wages (roubles) 1991 and 1992 Third Quarters

	Firm Size (employment)									
	1		2		3		4		5	
	91.3	92.3	91.3	92.3	91.3	92.3	91.3	92.3	91.3	92.3
Vice-Director	826	8192	1175	10583	1209	13581	1186	13766	1058	16896
ITR Professional	803	6773	904	5559	791	7952	796	8001	546	6533
Skilled Workers	903	8070	808	6927	877	9410	738	8566	681	9151
Unskilled Workers	539	5897	524	4600	400	3591	275	3354	299	4207

Firm Size Categories: 1= 80-350; 2= 351-700; 3= 701-900; 4= 901-1500; 5= >1501 employees
Source: World Bank Survey

Table 4: Real Statistical Wage Index; by Firm Size and Type of Work; (1991.3=100)

	Firm Size				
	1	2	3	4	5
Vice-Director	64	58	72	75	103
ITR Professional	54	40	65	65	77
Skilled Workers	58	55	69	75	87
Unskilled Workers	70	57	58	79	91

Firm Size Categories: 1= 80-350; 2= 351-700; 3= 701-900; 4= 901-1500; 5= >1501 employees
Source: World Bank Survey

main grade categories. The only apparent loser in relative terms were professional or ITR staff, such as engineers (see Table 3); but the shift in relativities is not that large. However, it is also clear that wage changes at the top of the grade structure -- for the best paid managers -- have been consistently higher. The standard deviation across firm size classes further shows a sharp divergence from other functional categories. This points to the fact that the relative wages of top level staff have improved most in the largest firms. In addition, we note a clear widening in wage differentials within functional categories, particularly again among top managers. This suggests that the compression imposed by the previous tariff wage structure is at least beginning to come apart, even if the process remained (as of November 1992) somewhat muted.

Further decomposing relative wage changes within industry provides a more nuanced picture. The ILO dataset indicates that the variance over firm size and property form increases significantly over September 1991/June 1992 but the ranking remains unaltered. Employees in medium (500-1000) and large (> 1000) firms generally have higher average wages and earnings profiles. Clear improvements in relative wages can be found in energy and heavy industry. By contrast, the main relative wage loser is engineering; the branch accounting for the bulk of job losses in industry. The World Bank survey results report little shift in relative rankings and surprisingly low variation in wage rates classed by skill over branches [12].

The correlation between employment losses and relative wage falls is further confirmed by analysis of regional wage movements and relativities. Thus, while wages in the 'extremities' remain adjusted upwards uniformly by coefficients of 1.5/2.0, it is notable that wages in the North-Western and Central Regions -- the areas with the largest net job losses -- decline relative to the national average in early and mid-1992. This is supported by the ILO survey in June 1992 where wages were found to be systematically lower in firms with the highest employment contraction [13]. This may indicate the emergence of a weak, emerging association of wage behaviour and levels of unemployment in regional labour markets. Given very limited mobility of labour, local unemployment, rather than national, could be expected to be the incipiently targetted variable.

1.4: Wage Controls

Prior to 1992 wage controls were largely jettisoned, both explicitly and implicitly through

[12] See Commander, Liberman and Yemtsov (1992a) for more discussion of these issues.

[13] See Standing (1992)

reductions in the share of firm income transferred to the state budget. Nevertheless, the departures from the earlier structure of wages and their relativities was reasonably contained. The nominal wage explosion was concentrated in the second half of 1991. In 1992 -- perhaps surprisingly -- wages were not explictly used as an anchor in the projected stabilisation. Even so, wage controls were not completely discarded as wage payments in excess of four times the minimum wage were taxed at the same rate as profits -- 32%. For 1993 this has been amended to 50% alongside a reduction in taxation of enterprise income. Figure 3 provides an estimate of warranted as against actual wage payments for each month in the period January to August 1992. The calculation is however somewhat imprecise as the use of complex intra-regional wage coefficients is difficult to account for fully. Nevertheless, the obvious conclusion that can be drawn is that the wage rule has been a weak one and has been unable to contain wage claims. In all months, except January, the actual economy-wide wage bill has exceeded the norm-given wage bill by a significant margin. The ratio of the actual to the norm has averaged 1.6 over the first eight months of 1992.

2: Employment

2.1: The Pre-Reform Context

We start with a feature common to all socialist regimes; high labour force participation, in part a function of legal restraints on non-working. This includes strikingly high levels of participation by women, possibly around 85% for women aged between 16 and 54 years in 1987. We also note the rather high participation of pensioners in the labour force -- estimated at c30/35% in the early 1980s -- a factor encouraged by the labour legislation and the facility by which pension rights can be maintained alongside full or part time work [14].

The occupational structure was and remains rather particular. A heavy bias toward unskilled and skilled manual labour has existed reflecting production technology and the extensive growth strategy adopted in earlier periods. In industry skilled workers have comprised around 65% and unskilled workers a further 15% of total employment.

Several other factors stand out. First, the high degree of concentration and attentuated extent of competition yielded large firms with high average employment; second, the emphasis on heavy industry and military production generated a pattern of labour allocation significantly at odds with market industrial economies; third, as in other dirigiste economies, the services sector was rudimentarily

[14] See Barr (1992)

Fig 3

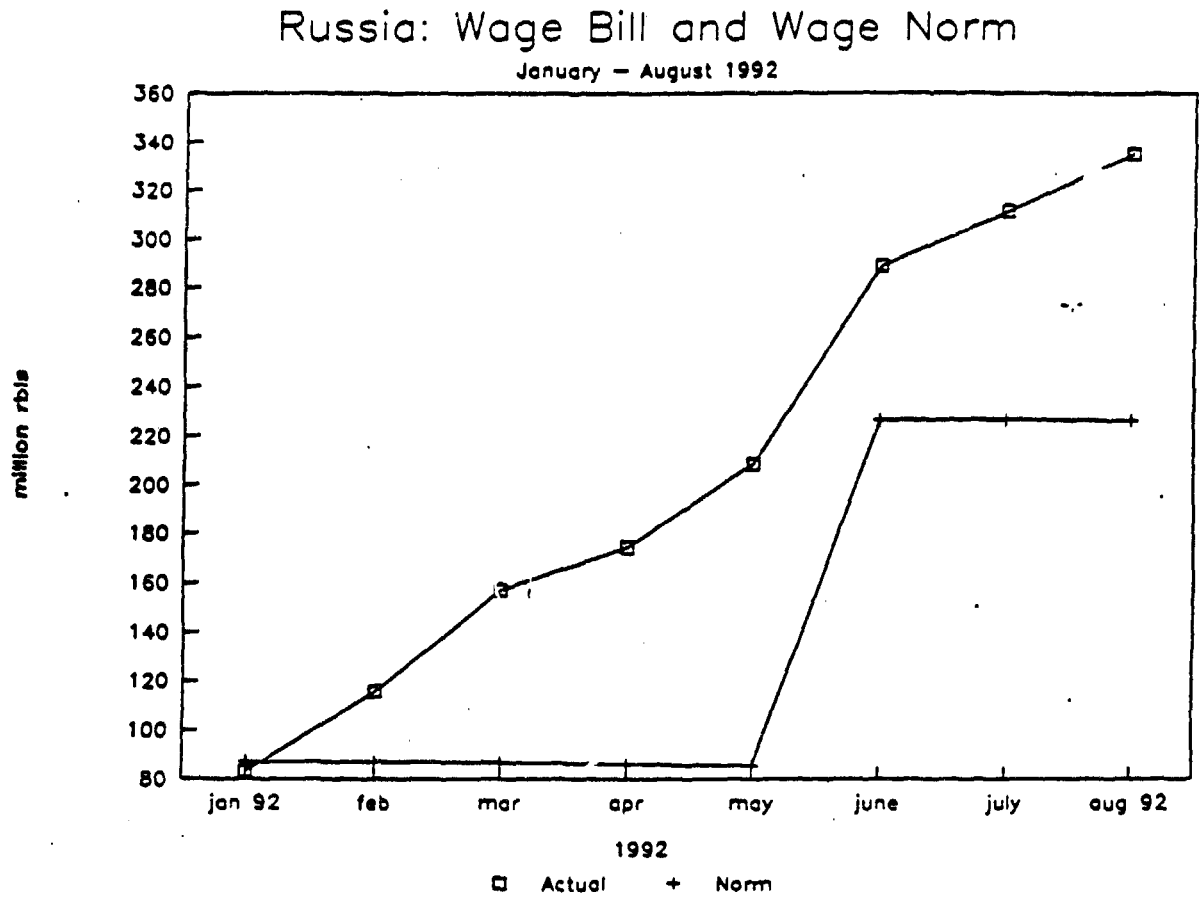
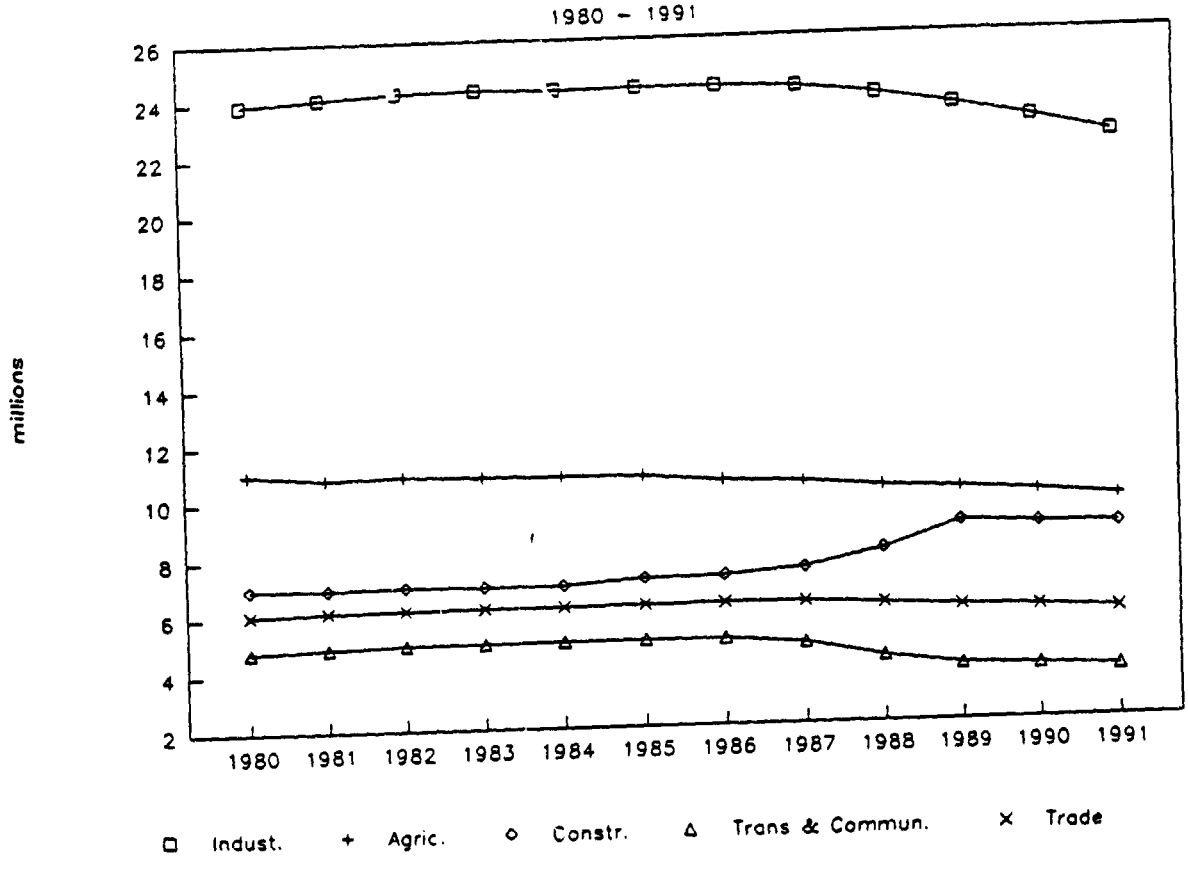

Russia: Wage Bill and Wage Norm
January – August 1992
million rbls
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
jan 92
feb
mar
apr
may
june
july
aug 92
1992
Actual
Norm

Fig 4


Russia: Employment by Sector
1980 - 1991
millions
26
24
22
20
18
16
14
12
10
8
6
4
2
1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991
Indust.
Agric.
Constr.
Trans & Commun.
Trade

developed -- the trade and communication branches accounted, for example, for less than 9% of total employment in 1985; fourth, open unemployment was kept very low (though estimates pre-1990 vary widely); frictional unemployment was variously put at between 0.6-2.7% of the Soviet labour force in the 1980s.

We do however observe reasonably high turnover rates, particularly at the base of the skill structure [15]. This was in part induced by changes to the relative wage structure associated with the development of priority sectors. Measures to reduce turnover, such as provision of firm-financed housing, contributed to greater regional immobility of labour and to a rather localized pattern of labour turnover. The consistently higher postings of vacancies with respect to job seekers (pre-1991) and the apparent downward mobility of skilled workers point to major problems of mismatch, in large measure related to the educational and training system and the rules for compulsory placement of professionals [16]. And it is striking, for instance, that turnover in 1991 remained at high levels -- in the Moscow and St.Petersburg regions at over 15% in industry. Nevertheless, it is worth emphasizing the predominantly localized nature of turnover and labour mobility, in part resulting from firm provided housing, in part from institutional-cum-legal constraints, including propiska, enforced by local authorities.

2.2: Changes in Employment in 1991 and 1992

It is important to understand that since 1985/87 we can observe downward employment adjustments in the major sectors that preceded any attempts at system-wide reform. Figure 4 shows that in industry, in particular, aggregate employment in 1991 was down nearly 8% over the peak in 1986 and this trend holds for the major branches, save construction. This is generally related to the enterprise reform law (mentioned above) and the wage setting regime allowed under that reform. In so far as greater decentralization of wage bargaining combined with an explicit tax on wages gave incentives for employment reductions and enhanced labour flows conditioned by relative price effects this result could be expected.

Aggregate data provide some insights into employment changes over 1991 and 1992 and are striking for showing relatively little apparent employment loss has been generated to date, given the size of shocks to output. This holds for both the state sector as whole and for industry. Total state sector employment fell by less than 3.5% between January 1991 and January 1992 and by a further 1.3%

[15] Labour Turnover in industry was around 14% between 1988-1991.

[16] An extended discussion is provided in Oxenstierna (1990), pp215ff

between January and August 1992. In the same period, GDP is estimated to have fallen by at least 22%. For industry, the decline is yet smaller; employment being down less than 3% in the first reference period and falling a further 0.5% between January and June 1992. Part-time work appears also to have declined over the course of 1992; possibly by around 5/6% in industry. Across other sectors, no clear pattern can be detected.

For industry, there appears little immediate evidence that part time work has substituted full time employment, though current methods of classification would not capture changes in working time in this way. Formalized part time work may indeed have been trimmed more than for full time employees. Of more significance have been changes -- particularly since June -- in the numbers of workers on short time work and forced holidays. As already mentioned, a Goskomstat firm survey in October 1992 indicated that as much as 25% of all firms have placed some fraction of their labour force on unpaid leave or short time working and that this share had doubled since June 1992. Moreover, other evidence suggests that in significant numbers of state firms, management has effectively lost control over labour discipline [17]; a further negative shock to labour productivity.

The strategy of choosing unpaid leave or short timework could be consistent with the general reluctance to impose involuntary separations and rather induce active job search behaviour or secondary employment by de facto reducing wages and time allocations in primary employment. But the World Bank survey did not find that this was a wholly generalized process. There was evidence that use of involuntary leave and short time work had increased over 1992 but by 1992.3 under 35% of firms reported use of the first and 17% use of the second procedures. In sum, under 5% of the total labour force was on prolonged involuntary leave; and nearly 90% were concentrated in machine building and light industry. Firm-specific output changes were, as expected, inversely correlated with involuntary leave. A further 5% of workers were reported on short time work but 70% of those on short time were from one firm. Unfortunately, the data on short-time work and unpaid leave remain fragmentary and do not allow us to get a clear picture.

A number of further nuances in the changes to employment can be observed in the regional data. First, there is more variance in 1992 with several regions -- the North Western region, including St. Petersburg, and military dominated enclave, Kaliningrad -- experiencing employment contraction of between 4-5%. Decline in employment in the military sectors is likely to account for a significant share

[17] Though this does not show up in additional claims for sick pay - a time honoured method of shirking.

of the fall in employment in the North West. But in general, this association cannot be assumed. We observe no major job losses in other heavily military dominated regions, such as the Urals, even if anecdotal reports speak of huge drops in output. For two oblasts -- Novosibirsk and Saratov -- where we know that military employment ranged between 43-51% of total employment pre-1991, we observe no markedly stronger downward pressure on employment. Second, for industry, employment contraction over 1991/1992 appears slightly lower than for the state sector as a whole. Moreover, branch data show stationary or slightly increasing employment in 1992 for all branches bar engineering. Almost the entire change in industrial employment in 1992 can be attributed to changes in the machine building and light sectors.

While the story on the state-side of the employment picture is of gradual job destruction, alongside a rather high degree of churning -- with workers moving at quite high rates between firms -- the picture with respect to the private and cooperative sectors -- the sectors in which we might expect some job creation -- is less evident. Thus is partly because of confusion arising from the very widespread reclassification of title that has been occuring in both years [18].

In the case of cooperatives, official survey data show a 40% decline in employment between January and July 1992, while private firms' employment increased by over 10%. Even so, this would imply that combined employment in these categories in mid-1992 comprised no more 3% of total employment. Further, the relatively high share of secondary workers -- 16% as against the economy-wide average of 3.5% -- suggests that many of these firms may be small, part-time operations. It seems likely that official data capture very inexactly the path of private sector employment and likely grossly underestimate.

2.3: Employment Changes: Firm Level Data

Official data covering the state sector also appears subject to measurement error, in part arising from a breakdown in traditional reporting procedures and coverage. This makes firm level data attractive as a countercheck. We can explore employment decisions in more detail using the World Bank survey results, as well as information from the ILO dataset. The former, in particular, yields some striking results that can be summarized along the following broad lines; (i) high rates of turnover, especially among workers, (ii) very low levels of involuntary separations across all firm size classes and branches,

[18] The ILO survey in June reports 27% of establishments classed as leasehold, 55% state and 18% private but the distinction is not, it appears, very meaningful in terms of economic behaviour. The state sector may be shrinking fast (down 8% over their sample between September 1991 and June 1992) but primarily by means of title changes.

Table 5: Employment Changes over 1992, 3rd Quarter
Separation, Hiring and Vacancy Rates (% of labour force)

	Firm Size 1		2		3		4		5	
Separations	10.5		10.0		9.5		5.7		7.8	
Hires	7.2		3.7		4.8		2.5		9.9	
Net Separations		3.7		7.0		5.2		3.3		-2.2
Expected Separations in 92.4	2.4		2.4		2.3		0.5		0.5	
Vacancies	1.5		3.1		1.0		2.2		1.9	
Posted Vacancy		0.1		1.0		0.7		0.9		1.1

Firm Size Categories: 1= 80-350; 2= 351-700; 3= 701-900; 4= 901-1500; 5= >1501 employees
Source: World Bank Survey

Table 6: Job Separations by Type
(% of total separations)

	Firm Size 1	2	3	4	5
Quits	62.2	52.3	52.9	43.4	52.7
Disciplinary	8.5	3.2	3.4	7.7	4.7
Employment Reduction	10.4	31.3	10.7	27.1	3.1
Other	19.9	13.2	33.0	11.8	39.5

Source: World Bank Survey

(iii) considerable new hiring by firms, largely to replace separating workers and, consequently, (iv), a generally low level of job losses through 1992.

For the firms sampled in the World Bank survey it is notable that while nearly three-quarters of the sample reported net employment losses for the third quarter of 1992, over 25% actually posted net employment gains. Further, in one quarter alone nearly 3% of the labour force experienced some labour market transition. The main results are condensed in Table 5. Several points emerge. First, for 1992.3 total separations amounted to around 8/10% across the firm size classes and the separation rate was fairly evenly distributed. Second, net job losses were much smaller, amounting to no more than 5% for the total sample. The dispersion is fairly low but in general net job losses are more concentrated among smaller firms. Indeed, the largest firms actually experienced net increases to their work-forces. Expected job losses over the fourth quarter that are reported are similarly low and inversely associated with firm size.

The ILO establishment survey provides a longer perspective. Over the period end 1990/end 1991 employment in the 500 establishments fell by around 7%; that over 80% of firms cut employment and that this was fairly evenly distributed across industrial branches, save for food processing sector. Further, for roughly 20% of the establishments (109) that were re-surveyed in June 1992, total employment decline since end-1990 was 15%. Between September 1991 and June 1992 alone employment fell by over 8% in their sample and over two-fifths of the establishments expected further employment cuts. But employment changes in 1992 appear uncorrelated with changes in sales and display no very striking or systematic differences over property forms [19].

The evident acceleration in job separations in 1991 and 1992 only very partially substantiates the claim that a major change in behaviour on the part of firms is occurring. The lack of a robust association of employment changes to sales changes (and by implication, to output changes) points to a generalized but fairly weak process of labour releases and gross flows induced by a change in employment rules and wage setting practice. It is revealing that the continuing high rates of turnover remain dominated by voluntary quits. Explicit job reduction decisions displayed considerable variance and amounted to no more than 17.5% of gross job losses for the full sample. Total involuntary separations amounted to less than a quarter of reported total separations. This pattern similarly emerges in the ILO data. The principal reasons for involuntary separation remain 'conduct' rather than the current or predicted path of output

[19] It should be noted that both the World Bank and ILO survey results were generated in regions and oblasts with relatively high levels of job losses relative to other regions.

and/or demand. Falling demand for firm output was cited in less than 3% of cases as a factor motivating forced separations. Indeed, gross flows were primarily voluntary -- 72% of turnover was through resignation and under 10% were dismissals. Survey evidence thus suggests that voluntary rather than involuntary separations have dominated and that these quits appear motivated by changes in relative wages and to have been concentrated among unskilled workers. There is some evidence that forced separations have also been concentrated among unskilled manual workers and, to a lesser extent, among temporary labour [20].

Despite considerable difficulties in interpreting employment changes due to data inadequacies, the overriding impression is of significant inertia. For a start, the absence of a robust association between sales and employment changes suggests that gross labour flows conditioned on relative wage changes resulting from relaxation of centralized controls have dominated. There is, for example, no evidence that establishment employment changes have been associated with job losses among women and pensioners; groups that one might hypothesize to be at greater risk. The respective datasets do not permit identification of the destination of quits. Consequently, we have no way of capturing exits out of the labour force. However, the information on the characteristics of those who quit through 1991 suggests that exit from the labour force was not the dominant motivation.

The ILO data on vacancies indicate rather low speads across branches for end 1991. Vacancies averaged about 6%; were fairly evenly distributed over property forms and firm size and were higher for firms that had experienced the largest employment losses. The vacancy rate declines more sharply in 1992, dropping over 40% over September 1991 for the same sample of firms. The World Bank sampled firms reported very low vacancy rates for 1992.3, equivalent to under 2% of current employment with even lower postings at the Labour Offices.

Interpretation of the vacancy data remains difficult given divergences in reporting practices and in confusion over the underlying, 'desired' level and structure of manning. This partly explains the conjoint existence of high turnover rates and a continuing, widespread perception of labour surpluses or underemployment in firms. Indeed, given technology, a re-arrangement of relative wages, resulting from an institutional shock and from ex ante firm-level mismatch, could exacerbate that mismatch as firms compete for particular types of workers. This might not show up in the aggregate vacancy posting. One notes that despite a clear majority of firms reporting aggregate excess employment amounting to between

[20] Note that temporary labour amounted to no more than 1% of total industrial employment in 1991.

5-20% of current workforces [21], many firms still complain of selective labour shortages, resulting in upward wage adjustments to attract labour. As in the past, perceived labour shortages appear concentrated among skilled, manual workers. The dominance of quits could then reasonably be expected to be associated with the continued posting of vacancies alongside complaints of over-staffing. These factors indicate a certain stability of objectives across industrial firms and reinforce the view that gross flows were largely driven by institutional shocks rather than by a process of firm-level restructuring. Consequently, involuntary separations have remained at rather low levels, given the size of negative shocks to output.

3: Unemployment

The spectre of mass unemployment in Russia haunts current policy discussions. Generalized output losses and the recognition that structural changes are likely to induce significant job destruction only partially offset by job creation in growing sectors, including the private, promote this anxiety. As yet, however, it is only a spectre. Although the changes to measured unemployment have been significant in absolute numbers, they have started from a very low base. This is not to say that job losses are unlikely to occur, merely that the apparently dominant strategy of firms over 1991 and 1992 has not been to induce large scale forced separations. Further, as relative wages and benefits have been subject to larger movement than the aggregate data capture, turnover has remained high and separations in 1991 remained dominated by quits. What is striking is that this broad picture remains only partly modified by the autumn of 1992. In summary, such adjustment as there has been has largely been borne by wages (and possibly by benefits) with little change on the quantities side.

Different shocks have their counterparts in the type of unemployment generated. In principle, some component of changes in employment can be attributed to aggregate, sectoral and labour supply shocks. Given the nature of reform one might expect sectoral shocks to have larger than normal effects on both demand (unemployment) and supply sides (vacancies) of the labour market [22]. Further, we might expect the latter to be non-trivial, given ex ante high participation rates across sexes. This might be offset if a decline in real incomes – hence substitution effect – dominates. At this stage, we lack sufficient information to pin down the extent of exit from the labour force.

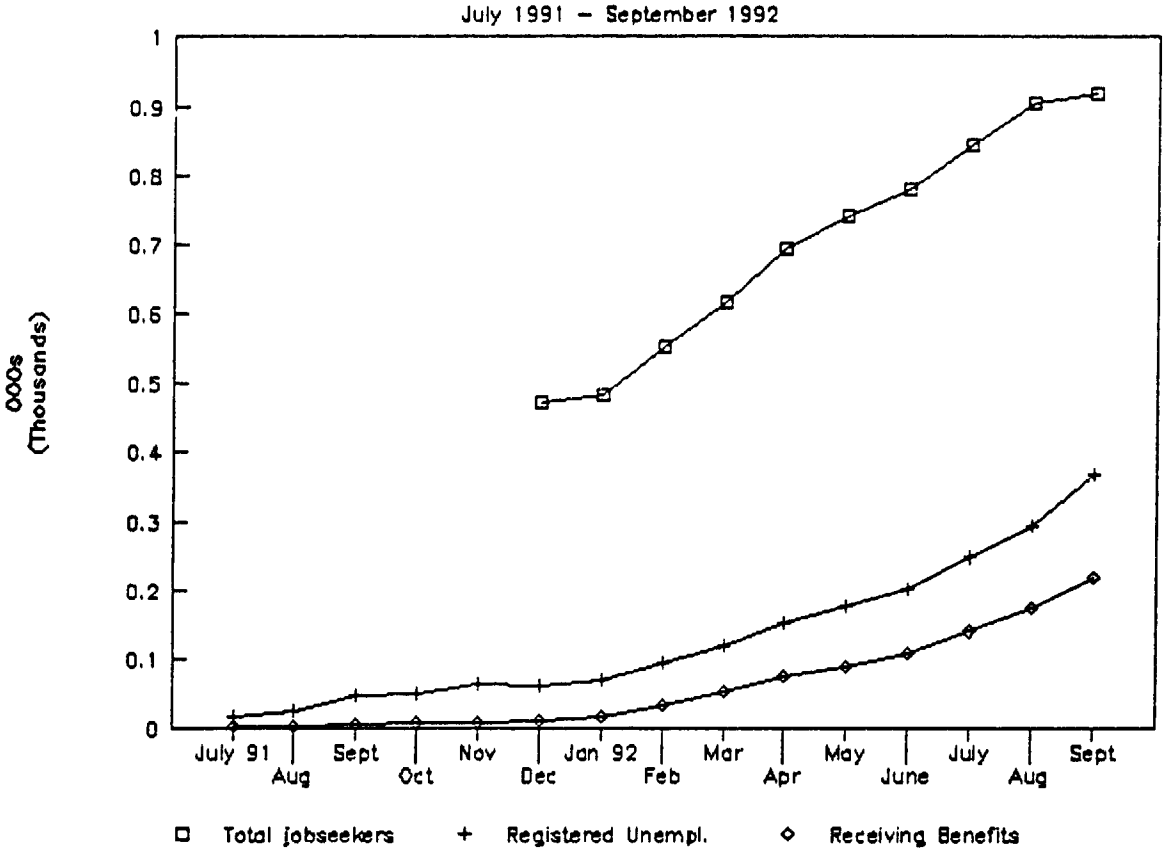
---

[21] The World Bank survey has 65% of firms reporting excess employment in 1992.3 with that excess amounting to roughly 5% of current employment. The higher -- 20% -- figure is derived from the ILO survey.

[22] At least relative to North America where aggregate activity shocks have generally been found to shift unemployment and vacancy rates the most. See Blanchard and Diamond (1989).

Russia: Unemployment Measures

July 1991 – September 1992



Russia: Unemployment – Monthly Changes

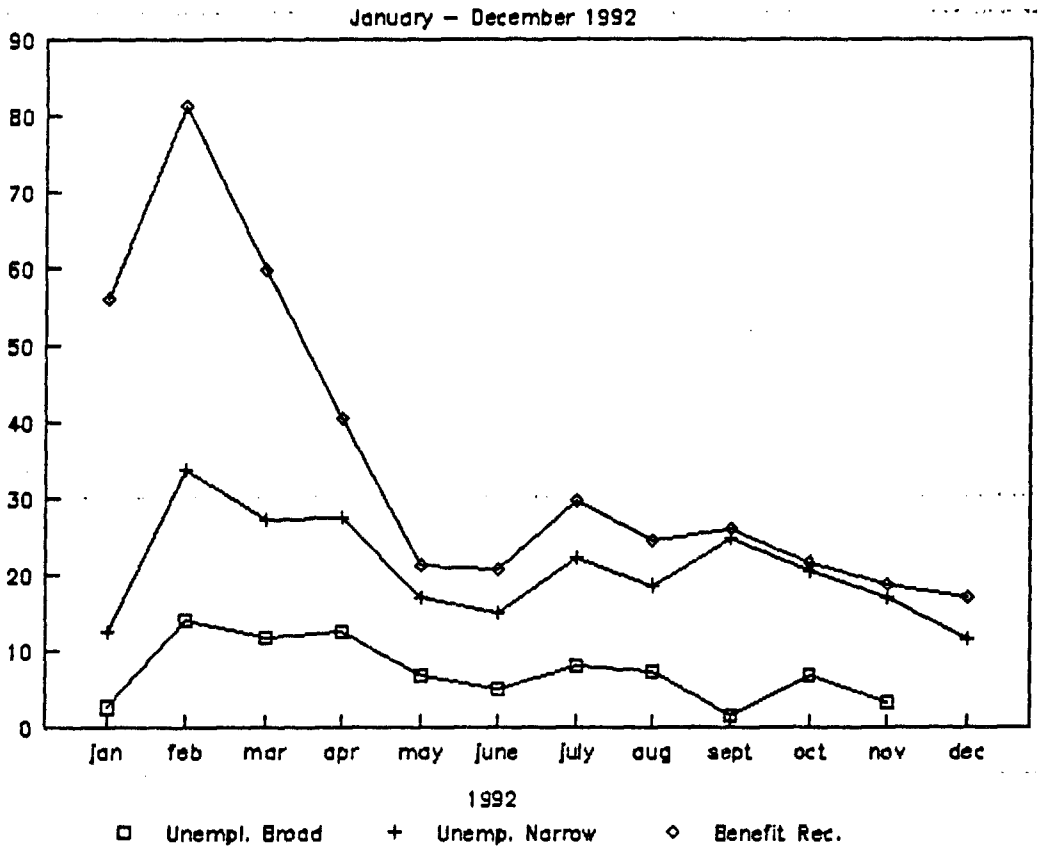


Fig 7

Russia: Net Monthly Flows

to Unemployment: Jan – Oct 1992

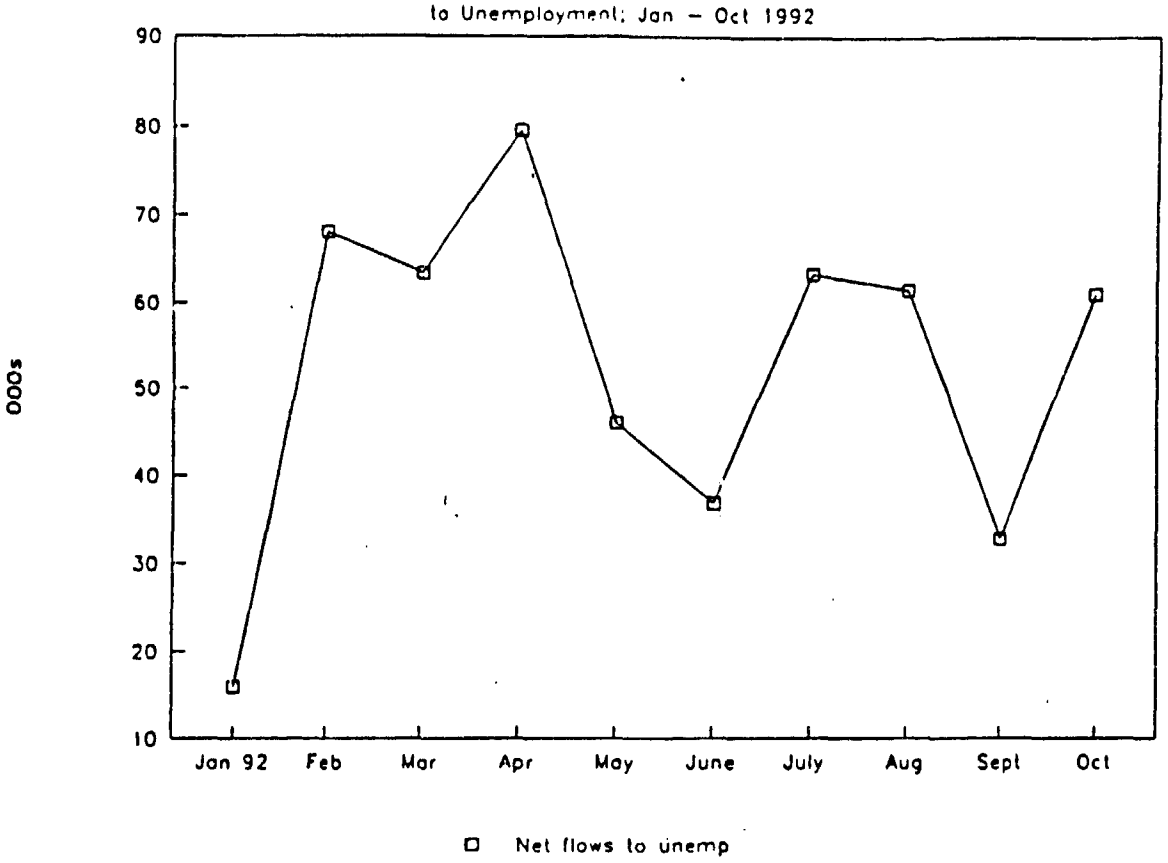


Figure 5 plots the path of unemployment over several measures for the latter part of 1991 and the first ten months of 1992. Using the more inclusive measure -- see Box 1 -- we observe a doubling of registered job searchers and the unemployment rate for this measure between December 1991 and October 1992. After initially sharp monthly acceleration, we notice some deceleration in the rate of increase to this measure after May 1992. This is true for all three measures of unemployment, includng benefits recipients (Figure 6). It is possible that this can be related to the overt shift in the monetary stance of the Central Bank. Inflows to the jobseeking pool appear to stabilize between June and September (Figures 7-8). By October 1992 the Russian unemployment rate amounted to no more than 1.5%. For those formally classified as unemployed -- the narrow measure -- the unemployment rate amounted to only 0.7% in the same month.

Data on the regional distribution of unemployment is revealing in a number of respects (Table 7). First, while the major share of total unemployment (c22%) remains concentrated in the Central Region, which includes Moscow, there is relatively little apparent dispersion in unemployment rates by region. Using the broad measure of job searchers, the Northern Region has consistently the highest unemployment rate but this is less than a percentage point higher than the Russia mean. We do observe a slight increase in the standard deviation and coefficient of variation across regions in the later observations post-June 1992 but in general we observe relatively little dispersion in the growth rates of unemployment across regions. This points to a fairly widespread and apparently common process in the generation of unemployment across regions, albeit at relatively low frequencies [23].

With respect to inflows to unemployment we can pick out transitions induced by mass lay-offs in the firm sector. This provides a very crude proxy for measuring any apparent shake-out associated with some regime change and accelerated employment separations. Figure 8 gives gross inflows to the broad measure of unemployment with inflows originating from mass layoffs or explicit actions of job reduction. It is revealing that by the end of the period, gross inflows are largely dominated by mass layoffs, even if the aggregate level of the monthly inflows has moved within reasonably narrow bounds. In stock terms, just over 40% of both broad and narrow unemployment measures in October 1992 were composed of people who had been separated through mass lay-offs. Further -- with the exception of the Central Region, comprising Moscow, where we find a disproportionately high level of layoffs -- regional

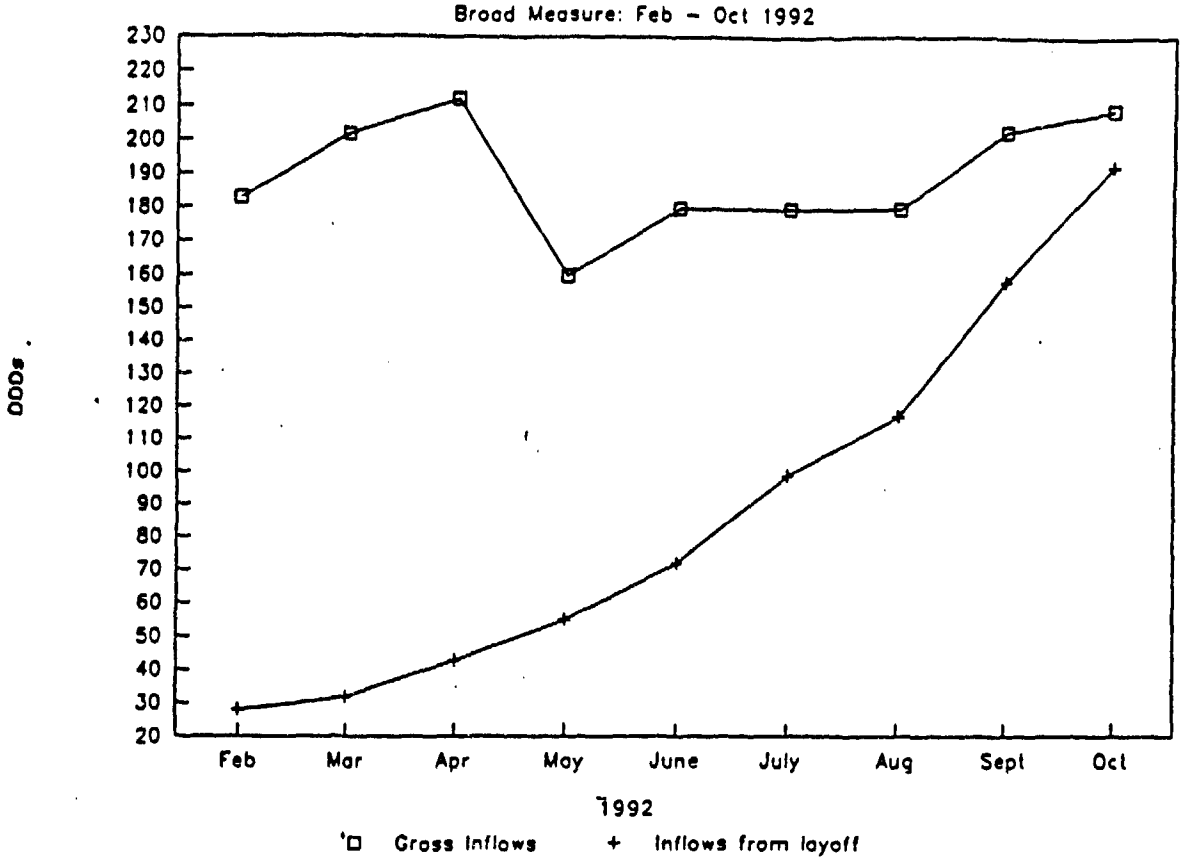
[23] We can isolate pockets of relatively high unemployment -- Yaroslav oblast in the Centre region and parts of Northern Caucasus, for example. But at present we lack sufficient information to pick up the determinants of local unemployment.

Table 7

Regional Unemployment Rates	RUSSIA	North	NorthWest	Centre	Volgo-Viatsky	Central Chernozem	Povolzhsk	Northern Caucasus	Ural	Western Siberia	Eastern Siberia	Far East	Kaliningr
Jan 92	0.7	1.3	0.7	0.7	0.6	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.9
Feb.	0.8	1.3	0.7	0.8	0.7	0.9	0.9	0.8	0.8	0.8	0.8	0.8	1.0
Mar.	0.9	1.5	0.9	0.9	0.9	1.0	0.9	0.9	0.8	1.0	0.9	0.9	1.2
Apr.	1.1	1.7	1.0	1.1	0.9	1.2	1.0	1.0	0.9	1.1	1.0	1.1	1.4
May	1.1	1.7	1.1	1.2	1.0	1.2	1.0	1.1	0.9	1.2	1.1	1.1	1.6
June	1.2	1.7	1.3	1.2	1.1	1.3	1.1	1.2	0.9	1.3	1.1	1.2	1.7
July	1.3	1.9	1.5	1.3	1.2	1.4	1.1	1.2	1.0	1.4	1.1	1.3	1.8
Aug.	1.4	2.0	1.6	1.4	1.3	1.4	1.2	1.4	1.1	1.5	1.2	1.3	1.9
Sept.	1.4	2.2	1.6	1.5	1.5	1.3	1.2	1.4	1.1	1.3	1.1	1.3	2.1
Oct 92	1.5	2.4	1.8	1.6	1.6	1.3	1.3	1.4	1.2	1.4	1.2	1.4	2.3

Fig 8

Russia: Gross Flows to Unemployment



data show such separations to be fairly uniformly distributed with surprisingly little dispersion in the changes. This again points to a common response function and path across regions.

Information regarding the composition of the unemployed and their respective durations is fragmentary. Nevertheless, Tables 8 and 9 provide partial evidence in terms of the sex and age of the unemployed, both broad and narrow measures, as well as one observation on durations for July 1992. We can see that in areas of relatively high unemployment -- the Northern and Moscow regions as also Kaliningrad -- unemployment durations are already more protracted. Around Moscow, nearly 20% of registered unemployed reported durations of between 8-12 months already in July 1992. The second striking feature is the weight of females in total unemployment and its continuous distribution over respective durations of unemployment. At least 70% of the unemployed and over 75% of those receiving benefits were women on 1 July 1992. The table also indicates a significant share of youth unemployment, suggesting that a non-trivial number of unemployed are new entrants to the labour force. Additional information on the skill and other attributes of the unemployed also indicate a strong bias toward white collar workers. In other words, unemployment has yet to hit severely the core of the male, blue collar workforce.

Outflows from unemployment show a somewhat surprisingly small downward slope with fairly small variance over the first ten months of 1992. For those leaving unemployment to jobs we observe little if any change in absolute numbers from February 1992 onwards and in the ratio of job finds to total outflows but an obvious fall in the ratio of job finds to the stock of unemployed (Fig 9). This appears to tally with the available economy-wide data on hires that indicates a continuing high volume of hiring in the economy through 1992. The fact that a consistent 40% and more of the outflows from unemployment are reported as finding jobs is itself reasonably striking in a context of large cumulative output declines and widespread reductions in capacity. Further, for September and October 1992 the data allows us to focus a little more sharply on the efficiency of job finds. Over 30% of those who found a job did so within ten days of registering as unemployed. It is unlikely that this 30% would have received benefits for their unemployment spell.

Several points can be made with regard to the path of vacancies. In the first place, we observe a clear and sharp rise in posted vacancies until September 1991. Thereafter, vacancies fall significantly. Posted labour demand by firms at the labour office (a more reliable measure than vacancies) fall by

Table 8

Distribution of unemployed and recepients of benefits by duration, July,1,1992

	All sample		Of which:			
	TOTAL Persons	%%	Young(Age16-29) TOTAL Persons	%% to total stock	Women TOTAL Persons	%% to total stock
UNEMPLOYMENT						
TOTAL	202882	100	64195	31.6	144297	71.1
Duration <1 month	54617	26.9	16870	30.9	37977	69.5
of Unempl1-4months	99739	49.2	33415	33.5	72046	72.2
4-8months	35823	17.6	11376	31.8	26110	72.2
8m-1year	12697	6.3	2534	20	8164	64.3
REC. BENEFITS						
TOTAL	107671	100	35271	32.8	82787	76.9
Duration <1 month	27480	25.5	8816	32.1	20742	75.5
of Rec. 1-4months	58794	54.6	20450	34.8	45140	76.8
4-8months	18062	16.8	5500	30.5	14208	78.7
8m-1year	3335	3.1	505	15.1	2697	80.9

Table 9

UNEMPLOYMENT DURATIONS BY REGIONS July 1 1992
[shares]

		RUSSIA	North	NorthWest	Centre	Volgo-Vlatsky	Central Chernozem	Povolzhsk	Northern Caucasus	Ural	Western Siberia	Eastern Siberia	Far East	Kaliningr
UNEMPLOYMENT														
TOTAL	Persons	202882	16260	27076	46412	14605	6658	13288	26054	22077	12988	5860	8268	1906
Duration	<1 month	27	24	39	22	29	27	27	22	26	30	30	28	19
of Unempl	1-4months	49	44	45	44	55	51	51	50	58	53	53	52	51
"	4-8months	18	29	12	17	14	19	18	24	14	15	14	17	26
	8m-1year	6	3	4	17	2	3	4	4	2	2	3	3	4
REC. BENEFITS														
TOTAL	Persons	107671	5740	10008	19420	9570	4683	10755	13257	15432	7852	3508	5619	1180
Duration	<1 month	25	26	25	28	26	24	25	19	26	30	28	25	22
of Rec.	1-4months	55	49	51	56	59	52	53	56	57	51	54	56	53
"	4-8months	17	21	17	13	13	21	18	23	15	17	16	16	24
	8m-1year	3	4	7	3	2	3	4	2	2	2	2	3	1

around 50% between January and October 1992 [24]. As Figure 10 shows, unemployment and vacancies move in opposite directions, suggesting more the dominance of aggregate rather than reallocation shocks. This contrasts, say, with Poland in 1990 and 1991. There, vacancies initially increased and then decelerated rather gradually even as the unemployment rate shifted up over eight percentage points, suggesting the presence of mismatch and mobility constraints. But for Russia, there appears to be clear negative correlation between regional unemployment rates and the vacancy to unemployed ratio as well as considerable convergence in the changes for regional vacancies. These features suggest, at first approximation, the process to have been dominated by aggregate-type shocks and that reallocation effects have as yet been weaker. Of course, we are unable presently to get a proper handle on durations and hence on separating out not only the weight of changes in average duration on unemployment but also in determining the effectiveness of job search behaviour by the unemployed. But an obvious assumption would be that a reduction in search effectiveness would leave vacancies broadly unchanged even as uner ployment rises. By contrast, we currently observe an inverse movement of unemployment and vacancies.

The rapid expansion in the numbers eligible for benefits -- from under 19% of the narrow unemployment measure in December 1991 to 60% in September 1992 -- can primarily be explained by the lagged feed-through of unemployed after exhaustion of severance pay arrangements and the declining share of new entrants and other non-eligible benefits categories. It also raises the issue of financing these benefits. The replacement ratio has averaged 57% of the previous year's wage over the eligible year of benefits payment. At first inspection, this ratio seems high; most OECD countries have similar ratios for gross benefits to gross wages. But several caveats are in order. First, benefits are not indexed and with high, rising inflation the result has been that most benefits payments collapse to the minimum level. Second, given the importance of non-cash elements in average wages, inclusion of such benefits would likely radically lower the effective replacement ratio.

Box 1
Unemployment:
Measurement and Institutional Issues

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[24] We should note that most (>85%) of these posted vacancies are for manual workers, reflecting the historical bias in the composition of labour demand of Russian firms.

Fig 9

Russia: Unemployment inflow and outflow

January – October 1992

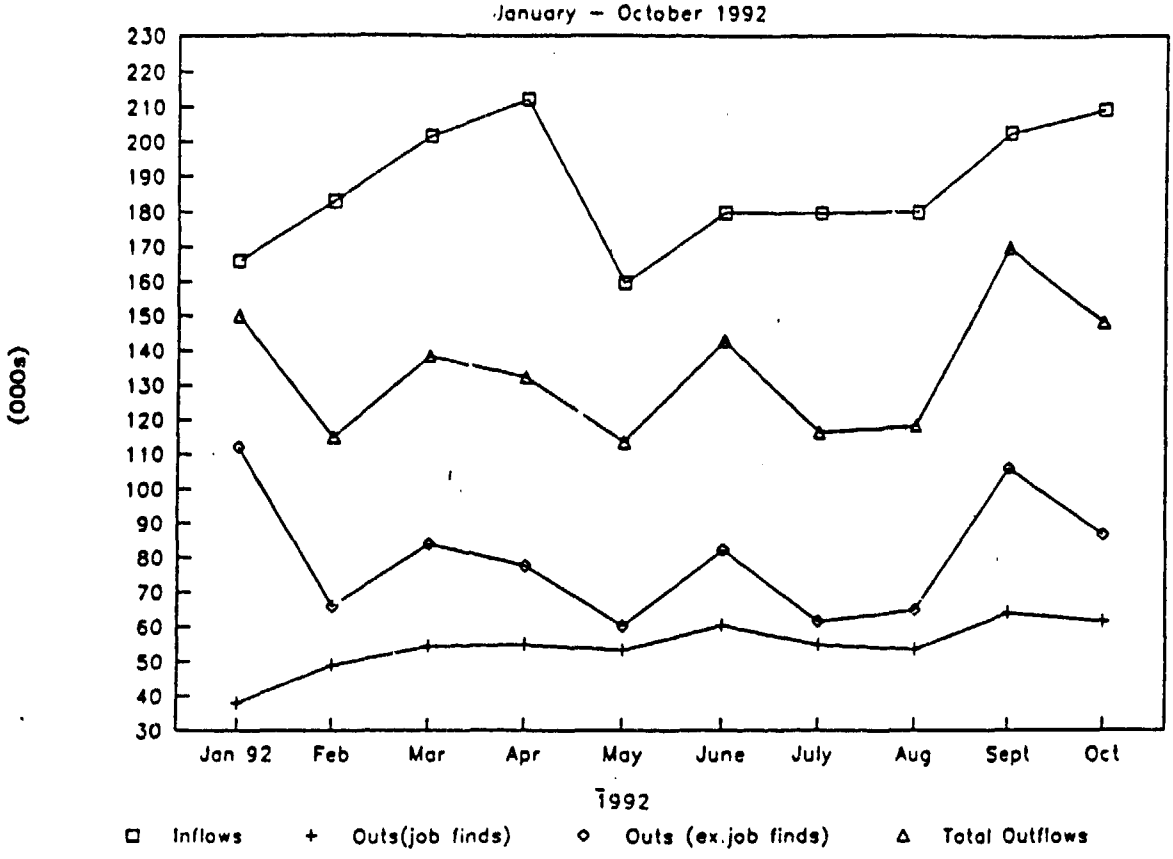
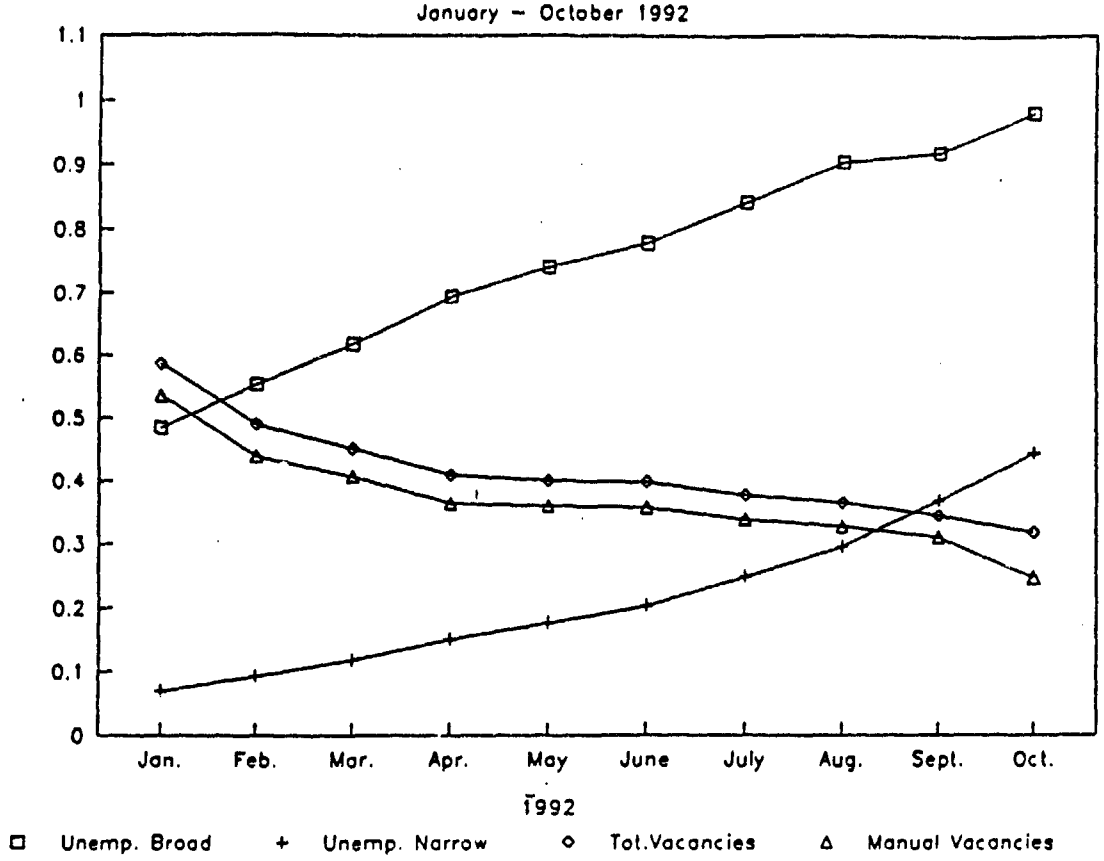


Fig 10

Russia: Unemployment and Vacancies

January – October 1992



Russian statistics measure unemployment in a variety of ways. The broad category of jobseekers includes people lacking full or part time work who are looking for work and have registered in a Labour Office. These would include, demobilized military, retrenched staff -- including those dismissed by mass lay-offs from firms -- new entrants, people returning to the labour force as well as those voluntarily quitting previous employment. Workers dismissed by firms have the right to a maximum of three months severance and initially get classified in this pool, rather than among the unemployed and benefits receivers.

A sub-category are those with the status of unemployed, the narrow measure. These include in principle all active job searchers who cannot be matched with employment by the Labour Office. At the end of 1991 this category amounted to around 13% of total jobseekers but has risen through 1992 to nearly 40%. This path is primarily governed by the reclassification of jobless two months after severance.

Benefits are paid to only a fraction of those classified as unemployed, using the narrow measure. At end 1991 this amounted to around 18% of the latter, rising by September 1992 to 60%. To receive benefits, an individual must have at least one year's work history and be actively searching for work. Those dismissed for disciplinary reasons cannot claim benefits and refusal of two appropriate job offers results in loss of benefits. For the first three months of unemployment, dole amounts tc 75% of an individual's average wage over the previous year, falling to 60% for months 3-7 and 45% for months 7-12. After a year, benefits eligibility ceases, save for those individuals with work histories exceeding 25 years. In these cases, each year of service over 25 years adds an additional week of benefits eligibility. For those with under one year's work experience or with very low prior wage history, a minimum benefit equal to the minimum wage is paid. Benefits are paid out of the Employment Fund financed by 1% employer contribution and budgetary transfers.

Currently, discussions for the new Employment Law are underway and these aim to translate the present system into a flat-rated structure with payments set for six months at 125% of the minimum wage, falling to 75% after six months. Benefits will rise by 10% for each dependent with maximum benefits capped at 90% of the last three months' wages. Benefits duration is proposed to rise to 18 months.

4: Employment, Output and Relative Prices

To this point, we have concentrated exclusively on the institutional setting and path of labour market variables in the recent period. The exercise was necessary given problems in the data and the inherent difficulties of adequately mapping recent changes. We now, of course, need to make an explicit link to the real side of the economy.

Data on output movements are difficult to interpret. First, because of the traditional preference for using constant price indicators with unclear specification of the underlying price indices. Second, because reasonably significant shares of output likely escape the statistical net. What data that are available clearly indicate strong downward shifts in output across a broad range of sectors and goods in the early part of 1992. Contrasting physical output in Jan/Feb 1992 with the same months of 1991 for 25 branches of industry, the unweighted average decline is around 14%. A sample of most firms across eight branches of industry indicates that output declined by around 13/15% comparing Jan/Mar 1992 with

Table 10: Responses by Russian Firms to Changes in Key Variables; January - June 1992 (% of responses by size class and response)

	Firm Employment Size			
	<200	**201-500**	**501-1000**	**>1001**
Output				
+	31	22	22	15
=	18	22	16	21
-	51	56	62	64
Raw Material Stocks				
+	55	55	64	61
=	18	17	11	6
-	27	28	25	33
Finished Goods Stocks				
+	60	69	70	78
=	27	15	13	8
-	13	16	17	14
Employment				
+	16	19	21	29
=	40	25	20	14
-	44	56	59	57
Demand				
+	14	13	20	11
=	33	22	24	18
-	53	65	56	71
Imports				
+	20	20	20	18
=	30	60	27	21
-	50	20	53	61
Exports				
+	0	20	6	25
=	67	53	50	30
-	33	27	44	45

Source: Russian Goskomstat

Jan/Mar 1991. Over the same period, employment contracted by only 3%. Seasonally adjusted value data for industry also indicate the same order of magnitude for the decline over the first half of 1992. Comparing Jan-September 1992 with the same period in 1991 for industry identifies a 17.6% fall (not seasonally adjusted) [25].

Branch and sectoral data for Jan/Aug 1992 over the same period in 1991 indicate gross output falls of between 8-30%. The variance does increase across observations but removing construction and light industry accounts for most of this increase. Survey data reporting changes in capacity utilization between end-1991 and June 1992 show a 8.5% fall. Again, we observe little increase in the standard deviation over branches of industry and the impression is reinforced of a largely aggregative shock to output with low dispersion in the changes in capacity utilization across branches. Aggregate data on manhours for the major sectors over 1992 -- a crude proxy for capacity -- show a generalized upward drift, measured over January to April 1992, with a sharpish fall thereafter. In May and June 1992, industrial manhours were down between 9-15%% over the beginning of the year, although this ignores any seasonal factors.

Table 10 reports the results from a large sample of firms undertaken by the Ministry of Economy in mid-1992. It groups responses by firm employment size and with respect to a number of key variables. It is notable that output decline was present in over 55% of cases, employment losses in a slightly lower number. Unambiguously negative demand shocks were reported for between 53-71% of cases with the largest firms hit hardest. The overall impression is that output losses have been widely distributed but have been stronger for larger firms. Similarly forecasts of output, employment and demand changes for the second half of 1992 were consistently more pessimistic in the case of the larger firms.

Information from the World Bank survey provides some further information on changes in the volume of output over 1992. By November 1992, 58% of firms had experienced a clear decline in output over 1992 (see Tables 11 and 12). The unweighted mean projection for the year was 20/25% with around half the firms with output decline reporting over that range. 15% of respondents reported increases in output with the remaining 27% projecting roughly constant output volume. While aggregate data show engineering and light industry to have been hardest hit, the survey indicates a somewhat mixed response, with just under half engineering firms reporting constant or increasing output. Further, in the

[25] See World Bank (1992a) and Goskomstat.

case of declining firms, the output loss was considerably below the full sample mean. Nevertheless, the clear impression is of a common shock across branches and sectors with, however, fair dispersion in the size of the negative changes.

5: Aggregate and Structural Shocks

5.1: A Simple Taxonomy of Effects

We can describe the process in simple terms. The Russian economy has been subject to negative shocks combining both demand and supply side effects. We ignore which dominates at this stage. But given selective price liberalization, some trade liberalization and the collapse of prior domestic and regional trading arrangements, we can assume that we are observing a combination of aggregate and structural shocks, the disentangling of which is far from straightforward. Aggregate shocks could have been channelled through changes in macroeconomic policy, such as a deflation of household demand for firm output through negative income and wealth effects. Similarly, with a financial system separating household and firm accounts, a restrictive credit policy could likewise induce a fall in money and ultimately, output [26]. On the supply side, we have two obvious, possible channels. The first is that originating with the collapse of part of intra-CIS and CMEA trade, leading, in certain cases, to quantitative shortfalls. Output in certain activities appears to have been constrained by lack of inputs availability. Second, are the possible effects associated with both changes to domestic administered prices and resulting from trades with other CIS entities. A clear candidate would be relative energy prices. Such a relative price effect would likely impart a common upward shift in firms' production costs and have aggregate effects if there was low dispersion in the ex ante ratio of energy to total costs across firms [27].

Structural shocks would be linked to shifts in the pattern of demand and competitiveness contingent on a new price level and set of relative prices and hence would generate differentiated sectoral outcomes with respect to real variables. Unlike the small open economy case, that new set of relative prices could not be largely imported through trade opening. Further, given partial price decontrol, we would expect reallocation shocks to be driven primarily by the exogenously given reduction in demand for particular goods; military goods are a relevant case. And indeed we observe some evidence of this in the first half of 1992.

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[26] For this argument, in this context of Poland in 1990, see Calvo and Coricelli (1992).

[27] This is not so unreal a view given the common lack of any prior incentive to economize on energy.

	Table 11	Physical Output in 1992: Direction of Change				
		Decline	Constant	Increase	No reply	TOTAL
	BY EMPL.					
	SIZE *					
	1	2	6	2	0	10
	2	6	1	3	1	11
	3	7	3	0	0	10
	4	6	0	1	0	7
	4	2	1	0	0	3
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	TOTAL	23	11	6	1	41
	Table 12	**Physical Output in 1992: Direction of Change by Branch**				
		Decline	**Constant**	**Increase**	**No reply**	**TOTAL**
	BY BRANCH					
	Metall.	4	0	0	0	4
	Chemic.	1	0	1	0	2
	Machin.	3	2	2	1	8
	Bld.Matr.	3	1	0	0	4
	Light	4	2	1	0	7
	Food	2	0	0	0	2
	Agro	2	0	0	0	2
	Constr.	1	4	0	0	5
	Trade	1	1	1	0	3
	Science	2	1	1	0	4
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Let us start with shocks emanating from macroeconomic policy. Two obvious candidates would be a fall in real monetary balances and real wages. An objective of the Russian Government's programme in the first part of 1992 was a policy of restrictive credit and tight money, alongside price liberalization. The price jump -- consumer prices increased 245%, producer prices 282% between December 1991 and January 1992 -- was indeed large. The consequences were various, some unintended. Nevertheless, it is evident that measured real wages did fall and that this was also true for households' real monetary balances. The fall in measured real wages was further exaggerated by the structure of, and inefficiencies, in the financial system provoking widespread cash shortages and accumulation of wage arrears by firms. As wages could only be paid using cash (**nalichnyi**) rather than non-cash (**beznalichnyi**) rubles, constraints on the former could have direct implications for current ability to pay wages. Thus, a certain share of nominal wage claims over the second half of 1991 and first half of 1992 were not satisfied due to currency shortages. By July 1992, shortly prior to the printing of larger denomination bills, wage arrears attributed to cash shortages amounted to 220 billion roubles or roughly 12% of current broad money stock. In certain enterprises this led to forced borrowing from workers of the order of 3/4 months wages; a significant negative shock to current household income streams given current monthly inflation (Figure 11) [28].

Negative shocks to firms' output coming from household demand and government spending could be expected to show up in part in inventory behaviour. Indeed, it is generally held that firms have accumulated inventory over 1992. Table 10 indicates that raw material stocks increased in roughly 60% of cases and finished goods in 70%. Striking is the fact that finished goods inventory rose more for large firms than other categories. This compounds the very sharp reported increase in inventory that occurred through 1991 . Preliminary information suggests that in 1991 inventory accumulation was primarily of raw materials; in 1992 of finished goods. Further, assuming that Kornai's proposition regarding excess inventories in socialist economies held ex ante [29], this would imply very high levels of inventory accumulation -- both of finished goods and raw materials -- relative, say, to OECD levels. Given negative real interest rates, uncertainty with respect to supplies, prices and government policy, firms continued to accumulate inventory in the expectation of a combination of bail-outs, windfalls via inflation as well as inertia in objectives. The implications of this intertemporal substitution effect for a genuine

[28] Yasin (1992) cites these figures but we have no good information regarding the number of firms and their distribution running wage arrears.

[29] See Kornai (1980)

regime break with a binding credit constraint on firms will likely be extra-large current output losses given excess ex ante inventory.

5.2: Credit Shocks and Interenterprise Borrowing

Anticipations of credit tightening and upward movement of interest rates motivated sharp increases in interenterprise borrowing. Arrears shifted from around 39 billion rubles at end-1991 to near 3.1 trillion by June before declining to c.600/650 billion at end-September following an increase in the money stock to cover a share of arrears. It seems likely that arrears are currently mounting again, given the expectation by firms of future de facto bail-outs via this route [30].

Schematically, the first part of 1992 could be summarized as an attempt to impose fiscal and monetary restraint. Measures of real money, narrow and broad, show significant cuts, particularly in January 1992. Credit to the economy was likewise cut sharply to not much over a quarter of the December 1991 level. By July and August, however, we clearly observe the effects of the Central Bank's decision to jump the money supply and, in particular, raise the supply of credit to firms. Credit to firms (Figure 12) in July was over a third higher in real terms than in January 1992 and on a rising trend.

This process is complex, combining elements of coordinated behaviour [31] with institutional particularities and problems directly associated with interrepublican financial and trade flows. But for our purposes, the result that is important is that demand for firms' output appears to have fallen less than might have been initially implied by the announced monetary stance of government. The increase in both measures of money and credit post-July reflects the validation by the Central Bank of the claims by firms implicit in their arrears to each other. Indeed, credits to commercial banks, primarily for covering arrears, have increased significantly in real terms throughout 1992 so that by mid-1992 a simultaneous and substantial expansion of credit to both firms and banks had occurred.

If the combined response of firms to the announced policy changes was to accumulate arrears and inventory, the obvious result would be a higher level of current output. Further, the presence of interenterprise arrears may partly explain the different paths of producer and consumer prices through 1992. The negative demand shock to households dominated that to firms, given the latter's ability to accumulate arrears.

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[30] See discussion in Granville (1992b). But note they may no longer take the form of arrears given the accomodating monetary stance of the Central Bank.

[31] The coordination arose from an explicit political challenge to government primarily articulated by the Civic Union as well as through de facto coordination arising from high concentration in the industrial structure.

Fig 11


Russia: Price Changes
Jan 1991 – Sept 1992
450
400
350
300
250
200
150
100
50
0
-50
jan
feb
mar
apr
may
jun
jul
aug
sep
oct
nov
dec
jan
feb
mar
apr
may
jun
jul
aug
sep
Retail prices
Ind. wholesale
Auction ex. rate

5.3: The Financial System and the Wage Constraint

If we hypothesize that, given the institutional controls in Russian firms, the primary objective has been to meet current wage claims holding employment broadly constant (see Appendix 2) this ability was potentially constrained not only by demand for firms' output but also by several institutional features [32]. Until 1991 an effective wall existed between cash and non-cash or **beznalichnyi** rubles. The former were used to satisfy wage claims, the latter constituted the bulk of transactions between firms, banks and wholesalers. Monetary balances of firms thus comprised cash and non-cash rubles. By 1992 it is clear that the distinction betwen the two types of money was effectively broken. However, until the second half of the year most transactions remained non-cash. For example, receivables have largely been classified as non-cash or **beznalichnyi** rubles. On the assumption that most firms believed (or are forced to believe by a credit queue) that arrears will be covered by the central authorities, their short-run objective remained for the first part of 1992 maximization of cash income. This in turn could be decomposed into two aspects. The first was to trade or barter with other firms in ways that realized cash (rather than non-cash) rubles. Cash transactions that did not pass through the banking system were particularly attractive. Cash rubles held in banks remained subject to the usual deductions when used to pay wages. These deductions amounted to between 30-60% on each cash ruble [33]. Non-cash rubles could be translated into cash rubles but would in addition incur a higher bank commission charge. Thus, gross revenues reflected in firms' monetary holdings in the banking system or in liquidity were the primary determinant of wages. This was further complicated by the importance of the second factor. This was to have a relationship with a financial agency that was willing to lend and had access to cash supplies. Lending by banks has remained conditioned on a net balance criterion for financial viability; receivables and liquidity have simply to exceed debt [34]. Further, any firm's positive balance in transactions with other firms has not been discounted by probability of repayment. This in itself motivated the accumulation of arrears prior to the summer of 1992 [35]. Even so, it seems probable that

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[32] We assume away financial reserves as being largely wiped out by inflation and the January price jump in particular.

[33] They include social insurance and pension deductions, income tax (basic rate 12%; maximum rate 40%); bank commission charges (0.5-5%) and a higher profit tax when wages exceeded the norm.

[34] This ignores obvious other channels -- bank-firm links, preferential treatment and so on.

[35] See Ickes and Ryterman (1992) for a fuller discussion.

Fig 12


Russia: Real Credit to Firms
Jan 91 - July 92 (GDP defl; Dec 90=100)
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
Jan91
feb
mar
apr
may
jun
jul
aug
sep
oct
nov
dec91
jan92
feb
mar
apr
may
jun
jul
Credit to firms

the dominant factor determining credit flows in the first half of 1992 were availability of cash, given the ruble shortage, and personal connections between firms and banks. The first constraint drops in the second half of the year and the permissive stance of the Central Bank after July further promoted easy credit lines.

Noting the presence of a strong bargaining role for insider workers in Russian firms and the explicit distinction over cash and non-cash rubles giving rise to non-trivial transaction costs, we can assume that the firm maximizes the welfare of current members subject to a cash-in-advance constraint. Holding employment constant, we can write;

$\beta w_t p_t q_t < h_t$; where h_t = real monetary balances; p_t = price of primary non-labour input, q_t = quantity of primary input and w_t = wages.

The problem for the firm is to secure sufficient cash income to meet current wage claims and cover any cash charges for non-labour inputs. We assume that the firm has no financial reserves and hence depends exclusively on liquidity to finance current activity. Note that if non-cash ruble payments continue in effect as normal (through 'insured' arrears) and cover most of non-labour production costs, then the constraint effectively becomes;

$\beta w_t < h_t$

We can now summarize several ways in which the ability of firms to satisfy current wage claims could have been compromised. But first, we should distinguish over two categories of firms. The first comprises producers, primarily consumer goods producers, who have greater possibilities for unmediated access to cash income, depending on combinations of government purchases and household demand. The second includes intermediate or capital goods producers who have primarily transacted in non-cash rubles, save for explicit allocations for paying wages.

The simplest case would arise where wages were the sole item covered by cash rubles. For group one producers, dependent largely on household demand, the first half of 1992 contained a major negative demand shock. Real monetary balances and wages fell unambiguously and by large apparent magnitudes. We observe a very sharp contraction in retail sales and may presume some accumulation of finished goods inventories. As government spending was held relatively in check over this period, we may also observe a contraction in government purchases [36]. For group two firms, the key issue would have been the ability to shift into cash sales, say, circuitously by barter deals or by direct export contracts. Given

[36] The fiscal deficit was roughly 3% and 5% of GDP over first and second quarters respectively.

the frictions associated with inter-republican trade we can assume that this was not invariably an easy option, while domestic barter deals would ultimately be subject to similar negative household demand effects. The picture is obviously complicated once one introduces quantity constraints on production -- as through the inavailability of inputs -- or of restrictions on financing production through non-cash rubles.

The observed relative restraint in wage growth over the first half of 1992 can be traced to firm level difficulties in realizing cash income, holding employment constant. These difficulties can be traced to the technical constraint on ruble supply and to downward pressure on current revenue streams arising from a combination of demand and supply shocks. This view is supported by the firm level responses in the World Bank survey. When asked what were the main constraints to wage increases in 1991 and 1992, tax constraints and sales revenues both accounted for 40% of responses for 1991. By contrast, for 1992 the sales revenue constraint accounted for nearly 70% of responses [37]. The financial system evidently amplified the negative shocks to household demand. The constant employment rule results from the control structure of firms. Once the distinction over cash and non-cash rubles was almost completely collapsed in mid-1992 [38] and the technical constraint on cash was broken in July/August, the firm's decision boiled down to choice over respective allocations to non-labour charges, wages and other costs. It seems likely that insider bargaining power could drive wages more rapidly in this context and we do indeed observe more wage drift in the second half of the year. Likewise, there is some evidence -- for example in the World Bank firm sample -- that non-taxed allowances for increasing benefits payments were widely used as a supplementary procedure for increasing wages [39]. The underlying process -- given the perceived failure to enforce a hard budget constraint on firms over 1992 -- thus combines two potentially disastrous attributes; employment stability and high nominal wage claims. While the latter may in part be contained in the government or administrative sector, firm's autonomy and atrophied competition may prove sufficient conditions for generalized wage push.

5.4: Structural Shocks

Structural shocks can be measured by dispersion in employment growth rates. For the period

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[37] This matches exactly with firms' responses to a question regarding the use of benchmarks in setting wages. Nearly 70% indicated available resources or current income streams; 27% made explicit assocation to changes in consumer prices.

[38] Firms have shifted wherever possible into cash transactions, either directly or through the banking system.

[39] Cash rubles up to 5000 rbls per worker could be used for material assistance or benefits without deductions.

January 1992/January 1991 we note a rather small dispersion using All-Russia data. There is a sharp increase in the standard deviation and coefficient of variation of changes by branch with respect to earlier periods but little with regard to changes across sectors. This is confirmed by the World Bank and ILO datasets which show that, with the exception of food processing and construction, negative employment changes have converged across branches.

Relating employment changes to a crude competitiveness measure yields no predictable association. Employment changes are uncorrelated with short-run shadow profit rates (where capital and labour are priced at zero), so that using international prices as a crude measure of competitiveness we observe no apparent structural change consistent with those implicit prices [40]. Indeed, the sector -- food processing -- which registers massively negative profits at shadow prices experienced the least decline in employment. These results are to be largely expected given closed economy conditions.

A more obvious association would be between output and employment changes and domestic relative prices. Assuming reasonably strict proportionality in movements of quantitative variables, a simplistic equilibrium framework would predict a positive association between the former and relative prices as indicative of a shift in the demand curve; a negative association a shift in the supply curve. But preliminary regressions relating output and employment changes as also output and employment to relative prices at branch and regional level provide rather ambiguous results. The output to employment link is largely absent although we find weak evidence of correlation in the changes when using regional data. More promising is the association of branch level output changes to relative prices. Relating the change in branch output relative to industrial sector output with the change in branch relative prices, we observe a clear and reasonably robust association in the changes over the majority of branches. The association is weakest for the energy, building materials and food branches but particularly tight for light and machine-building industry; those experiencing the strongest relative decline in output and relative prices. This provides some limited evidence in favour of some structural component to the distribution of output losses but, equally, provides little evidence that this has translated systematically into employment changes. Once again, we find evidence of major inertia in the system and considerable rigidity with respect to employment changes.

[40] See Senik-Leygonie and Hughes (1992) for shadow profit rate calculations. Their manipulations yield a 0.4 ratio of world value-added to world price for all Russian tradables sectors. Only oil and gas is close to unity with wide variation across industrial branches.

6: Conclusion

1992 was certainly a turbulent year in Russian history. Regime changes were announced and selective actions taken to validate those announcements. But the balance sheet a year later remains quite ambiguous. In the labour market it is true that open unemployment has been allowed to emerge. By the end of the year, the total number of jobseekers likely exceeded one million but this amounted to no more than 2% of the labour force. By the same token, wage and employment decisions were widely liberalized, despite vestigial controls over maximum wage increases. Some restraints on labour mobility were also removed. Changes in ownership title and the parallel expansion of a private sector – as yet largely concentrated in services – had important implications for the distribution of employment across public and private branches. But the data on the latter are limited and mostly unreliable. In cases where title change has been initiated, preliminary evidence suggests little real change in behaviour whether with respect to wage, employment or output decisions.

These changes are clearly substantive, particularly given the initial conditions. They are also important for future expectations with respect to entitlements to employment and income. But, as this paper has demonstrated, the changes remain restricted and the sources of these restrictions imply potentially very significant costs for the economy at large. In particular, the inability to break the soft budget constraint of state firms – or more realistically impose a systematic and understood set of constraints on the financing demand of firms – and hence of claims on the budget and/or banking system, combined with a continuing ability of firms to exercise market power alongside weak controls on wage claims, provides an obvious under-pinning to the stagflationary outcome that we presently observe.

The paper has demonstrated the presence of considerable inertia with respect to employment. Employment transitions have been dominated by continuing high levels of quits at the base of the skill structure. Involuntary separations have been limited even in contexts where capacity utilization has collapsed. Those involuntarily separated have largely been women and/or white collar workers. Firms have commonly provided de facto unemployment compensation to workers in the form of minimum wage payments and little or no work requirement. There is evidence of some increase in the rate and share of laid-off workers in inflows to unemployment in the later part of 1992 but the overall impression is that firms have preferred to hoard labour in the light of the uncertainty over policy and firm or product-specific market prospects.

Wages have been more volatile. The price shock of January 1992 clipped real statistical wages

back to mid-1991 levels but comparisons are of course extremely problematic given shortages. What is more open to interpretation is the evident rebound through the later parts of 1992. This arises through several channels. First, the institutional-cum-mechanical constraints on liquidity were resolved in mid-year. Larger denomination bills and an explicit relaxation of any tight money policy resulted in a major injection of credit to firms and the economy as a whole. Second, the cap on wage claims -- the minimum wage times four rule -- proved weak as firms either elected to pay additional profit tax or wrote wage claims into side-payments and/or benefits deals. We can trace this behaviour to a range of factors that include worker control over decision-making, a perceived high probability of continuing bailouts and the apparent neutrality of current wage claims with respect to privatisation possibilities. At the same time, the very sharp acceleration in monthly changes to producer prices for large producers points to, at best, a stable pricing rule facilitating nominal claims, at worst an increase in the mark-up which consequent validation of increased wage claims. Third, we begin to observe some increased differentiation in wages across skills and across region. But again we find evidence of considerable inertia in the system constraining the size of relative departures from the prior tariff wage structure.

The overall conclusion is that while wages initially bore almost all the adjustment costs, we observe far stronger signs of wage push over the second half of 1992. Employment adjustment begin to increase in the latter part of the year but from a still low base. But it is also true that job losses are significantly offset by hires and that much of the churning occurring through the labour market appears to be through voluntary separations and transitions over jobs. This may in part be linked to the process of wage differentiation that has begun and to the relatively buoyant demand for labour posted by firms. The latter phenomenon can be traced not simply to institutional inertia (posted vacancies differ widely from nominal vacancies) but to semi-binding short run constraints on production exercised by technology and the associated level and structure of labour demand. The combination of the above factors has actively promoted the emergence of a price-wage spiral. The effective reversal of earlier announced reforms -- particularly with regard to the monetary stance -- and by workers' evident intention of linking wage claims to price changes has been the primary fuel. The spiral is not a function of trade union power in the conventional sense -- most unions remain weak and fragmented -- but it does reflect the control structure and decision-making rules characterizing the bulk of Russian firms. Lax monetary policy and decentralized insider power, giving rise to relative employment stability and real wage rigidity, are powerful ingredients for a hyper-inflation.

Appendix 1

The Russian Firm Post-1988: A Framework

We first provide a short discussion of the practical derivation of wages adopted by the great majority of Russian firms with the Enterprise Law of 1988 and then associate it with a model of bargaining between managers and workers in a firm where the incentive structure is given from outside.

Two sources of financing for wages existed; the wage fund and the bonus fund. At this stage, we exclude non-monetary benefits channelled through the social development fund. Consider the wage fund first. This was given by a norm related mechanically to the firm's gross revenues (R), so that; $W = \xi R$. The firm's gross profit was derived net of non-labour costs (MC), the wage fund (W) and depreciation (δK);

$$P^g = R^g - MC - W - \delta K$$

Gross profit was adjusted downwards by a normative capital fee (βK), a unit labour tax (αN) and interest payments (r) to the banking system; this yielded accounting profit;

$$P^a = P^g - \alpha N - \beta K - r$$

From accounting profit, transfers were made to local and state budgets and to the originating ministry (T). Residual profit was defined as;

$$P^r = P^a - T$$

The bonus fund – as also the social development fund (benefits) and the production development fund -- was then centred on residual profits, again according to pre-given norms.

The formula for both wage and bonus funds evidently introduces a direct link to firm performance and provides a strong profit-sharing component to aggregate wage determination. This is reminiscent of the labour managed firm where average earnings, y, comprise a notional wage per worker, w, and a share of profit (residual profit, in this instance);

$$y = w + \theta P^r / L$$

While superficially this suggests that the basic maximand of the labour managed firm might apply to the Russian firm pre-1992, given exogenously set employment it would not be appropriate to view average per caput earnings as a choice variable.

An alternative way of couching the problem is as follows. The firm comprises two sets of agents, workers and managers. It operates with an exogenously given incentive structure imposed from the centre. Similarly employment is exogenously given (n). Prices are normalized to one. The workers'

utility function is additive and is a negative function of effort (E);

$$U_w = u(E) + v(W), \text{ where } u'(E)<0,\ u''(E)<0;\ v'(W)>0,\ v''(W)<0$$

The firm's production function can be written as;

$$G = Ef(n),\ [f(n)>0,\ f'(n)>0,\ f''(n)<0]$$

where output is a function of the labour input, f(n), times the effort (E) given by the workers.

The Manager's utility is a function of the pay he receives (P^m) with that pay being a fraction (α_2) of the firm's profit (PEf(n) - Wn) and a fraction (α_3) of the value of output (PEf(n)).

$$P^m = \alpha_2(PEf(n)-Wn) + \alpha_3 PEf(n)$$

Simplifying;

$$P^m = \alpha_1 PEf(n) - \alpha_2 Wn, \text{ where } \alpha_1 = \alpha_2 + \alpha_3.$$

The Manager's utility can be written as;

$$U_m = \alpha_1 PEf(n) - \alpha_2 Wn$$

so the manager's pay is positively related to the value of output and negatively to the total wage bill. This latter feature reflects the fact that the central authority gives priority to output and elimination of excess demand and uses the parameters α_1 and α_2 to achieve those objectives. The central agency's utility function reads;

$$U_a = -\beta_1[ED]^2 - \beta_2[Y-Y^*]^2,$$

where Y=output, Y^*=planned output and ED (excess demand)= PI - $(1-\alpha_1)$PEf(n) + $(1-\alpha_2)$Wn, (PI=investment). Departures from optimal values of output decrease utility quadratically. The instruments used to target zero excess demand and convergence to planned output are the incentive parameters (α_1 and α_2) conditioned on the manager's pay.

Wages and effort are the outcome of a bargain between workers and managers. The Nash solution is;

$$Max_{W,Z}\ \{[\alpha_1 PEf(n) - \alpha_2 Wn - U_M]\theta\ [u(E)+v(W) - U_W]^{1-\theta}\}$$

where θ is the bargaining power parameter. In a cooperative setting, it can be shown not only that the central agency has a high degree of autonomy in achieving its objectives but that increasing the output incentive (α_1) will imply higher wages paid to workers to motivate ; that an increase in α_2 -- the wage bill tax or penalty the central agency can impose if too-high wages are granted -- will lower wages [41].

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[41] The multipliers for a change in the Nash bargaining wage (w^*) as a function of changes in the exogenous variables are;

$$w^* = fn(\alpha_1, \alpha_2, P, n, U_m, U_w)$$

Note that this holds for given employment. However, allowing some measure of natural wastage, the obvious intuition would be that a wage bill tax would motivate labour shedding; a process which is clearly identifiable in the second half of the 1980s (see Section 2). Further, an increase in the Worker's threat point will raise wages and vice versa in the case of the Manager's threat point increasing.

The setting above assumes a closed economy and fixed prices. The framework is cooperative and allows the external agent -- the central authority -- to achieve its goals by use of the two linearly independent instruments α_1 and α_2. It captures the broad features of a system in which the incentive structure is determined effectively outside the firm and in broad line with centrally set objectives. As such it represents more an idealized model for the firm under central planning. But it readily allows for extension to a less cooperative setting in which, for example, Workers and Managers cooperate with each other against the central authority and where the latter's output and/or excess demand goals can be violated by the formers' behaviour.

Finally, the maximand above has been written in terms of wages and/or effort with employment exogenously given. While this remains -- as we show in Section 2 -- a reasonably apt characterisation of the Russian environment until the present, there are at least signs that employment should now be modelled as an endogenous variable and hence figure directly in the utility function.

Bibliography

Adam, Jan. 1980. Wage Control and Inflation in the Soviet Bloc Countries. New York, Praeger

Aslund, Anders. 1992. "Prospects for a Successful Change of Economic System in Russia". Stockholm, mimeo

Barr, Nicholas. 1992. "The Russian Cash Benefits System", World Bank, mimeo

Blanchard, Olivier and Peter Diamond. 1989. "The Beveridge Curve". Brookings Papers on Economic Activity, 1

Calvo, Guillermo and Fabrizio Coricelli. 1992. "Stagflationary Effects of Stabilization Programs in Reforming Socialist Economies: Enterprise-Side vs. Household-Side Factors", in, World Bank Economic Review, 6,1

Commander, Simon, and Ruslan Yemtsov. 1992. "Prices, Wages and Employment in Russia", World Bank and Moscow State University, mimeo

Commander, Simon, Leonid Liberman and Ruslan Yemtsov. 1993. "The Behaviour of Russian Firms in 1991 and 1992: Evidence from a Survey". World Bank, mimeo

Commander, Simon, Fabrizio Coricelli and Karsten Staehr. 1992. "Wages and Employment in the Transition to a Market Economy", in, Central and Eastern Europe: Roads to Growth, edited by G. Winckler. International Monetary Fund and Austrian National Bank, Washington DC

Granville, Brigitte. 1992a. "Price and Currency Reform in Russia and CIS". Royal Institute of International Affairs Special Paper, June

Granville, Brigitte. 1992b. "Russian Economic Reform in 1992: The Threat to Stabilization". Moscow, mimeo

Ickes, Barry and Randi Ryterman. 1992. "Inter-enterprise Arrears in Russia", International Monetary Fund and World Bank, mimeo

Oxenstierna, Suzanne. 1990. From Labour Shortage to Unemployment ? The Soviet Labour Market in the 1980s. Stockholm

Standing, Guy. 1992. "Employment Dynamics of Russian Industry". Paper presented to ILO Conference on Employment Restructuring in Russian Industry. mimeo

Standing, Guy. 1992. "Industrial Wages, Payment Systems and Benefits". Paper presented to ILO Conference on Employment Restructuring in Russian Industry. mimeo

Standing, Guy. 1992. "The Russian Labour Flexibility Survey: Content and Structure". Paper presented to ILO Conference on Employment Restructuring in Russian Industry. mimeo

Standing, Guy. 1992. "Changes in the Occupational Structure of Industrial Employment". Paper presented to ILO Conference on Employment Restructuring in Russian Industry. mimeo

World Bank. 1992. Russian Economic Reform: Crossing the Threshold of Structural Change. Washington DC

Yasin, Evgeny. 1992. "Market Reform and the Future of the Russian Economy". Paper prepared for Rand-Hoover Symposium, Washington DC, November. mimeo

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